# Communications

## For SITRANS LUT400 (HART)

Manual • 08/2012

# SIEMENS

Safety Guidelines: Warning notices must be observed to ensure personal safety as well as that of others, and to protect the product and the connected equipment. These warning notices are accompanied by a clarification of the level of caution to be observed.

**Qualified Personnel:** This device/system may only be set up and operated in conjunction with this manual. Qualified personnel are only authorized to install and operate this equipment in accordance with established safety practices and standards.

#### Unit Repair and Excluded Liability:

- The user is responsible for all changes and repairs made to the device by the user or the user's agent.
- All new components are to be provided by Siemens Milltronics Process Instruments.
- Restrict repair to faulty components only.
- Do not reuse faulty components.

**Warning:** Cardboard shipping package provides limited humidity and moisture protection. This product can only function properly and safely if it is correctly transported, stored, installed, set up, operated, and maintained.

This product is intended for use in industrial areas. Operation of this equipment in a residential area may cause interference to several frequency based communications.

Note: Always use product in accordance with specifications.

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	Technical data subject to change.

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- Siemens AG Industry Sector 76181 Karlsruhe Deutschland
- For a selection of Siemens Milltronics level measurement manuals, go to: www.siemens.com/processautomation. Under Process Instrumentation, select *Level Measurement* and then go to the manual archive listed under the product family.
- For a selection of Siemens Milltronics weighing manuals, go to: www.siemens.com/processautomation. Under Weighing Technology, select Continuous Weighing Systems and then go to the manual archive listed under the product family.

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# **Overview**

The SITRANS LUT400 ultrasonic controller may be operated via remote communications, using various PC software such as:

- SIMATIC PDM
- Web Browser Interface (used with Web Server Abyss provided for your convenience)
- AMS Device Manager
- Field Communicator 375/475 (FC375/FC475) (HART)
- A Field Device Tool (FDT), such as PACTware or Fieldcare

Please consult the appropriate manufacturer's operating instructions for general details on how to operate each software package.

# Safety Notes

Special attention must be paid to warnings and notes highlighted from the rest of the text by grey boxes.

**Note:** means important information about the product or that part of the operating manual.

# The Manual

This manual provides information on the use of SITRANS LUT400 with various remote communications software packages noted above. The manual is designed to help you get the most out of your ultrasonic device when used in conjunction with a remote communications tool. It provides information for the various tools in the following areas:

- Features and Functions
- Installation, Startup, and Configuration of the SITRANS LUT400
- Quick Start Wizards and Pump Control Wizards
- Changing parameters
- Parameter menus

This manual should be used in conjunction with the SITRANS LUT400 (HART) Operating Instructions (7ML19985MV01)<sup>1</sup> to help you set up your device via remote communications for optimum performance. We always welcome suggestions and comments about manual content, design, and accessibility. Please direct your comments to techpubs.smpi@siemens.com.

For other Siemens level measurement manuals, go to: <u>www.siemens.com/level</u>, and look under **Level Measurement.** 

See DVD shipped with device or download manual from product page of our website: Go to <u>www.siemens.com/sitransLUT400</u> > Technical Info > Manuals/ Operating instructions.

# **Technical Support**

If you have any technical questions about the device described in these Operating Instructions and do not find the answers, you can contact Customer Support:

• Via the Internet using the Support Request:

Support request (http://www.siemens.com/automation/support-request)

- Via Phone:
  - Europe: +49 (0) 911 895 7222
  - America: +1 423 262 5710
  - Asia-Pacific: +86 10 6475 7575

Further information about our technical support is available on the Internet at Technical support (<u>http://support.automation.siemens.com/WW/view/en/16604318</u>)

# Service & Support on the Internet

In addition to our documentation, we offer a comprehensive knowledge base online on the Internet at:

Service & Support (http://www.siemens.com/automation/service&support)

There you will find:

- The latest product information, FAQs, downloads, tips and tricks.
- Our newsletter, providing you with the latest information about our products.
- Our bulletin board, where users and specialists share their knowledge worldwide.
- Your local contact partner for Industry Automation and Drives Technologies in our partner database.
- Information about field service, repairs, spare parts and lots more under "Services".

# **Additional Support**

Please contact your local Siemens representative and offices if you have additional questions about the device.

Find your contact partner at:

Local contact person (http://www.siemens.com/automation/partner)

# **Abbreviations and Identifications**

Short form	Long Form	Description	
AMS	Emerson AMS Device Manager	software package used to commission and maintain SITRANS LUT400	
DD	See EDD		
DTM	Device Type Manager	a type of software that 'plugs into' a Field Device Tool (FDT).	
EDD	Electronic Device Description	(also referred to as DD)	
FC	Field Communicator 375/475	HART device used to commission and maintain SITRANS LUT400	
FDT	Field Device Tool	a standard used in software packages designed to commission and maintain field devices such as SITRANS LUT400	
LCD	Liquid Crystal Display		
LUI	Local User Interface		
PDM	SIMATIC Process Device Manger	software package used to commission and maintain SITRANS LUT400	
PMD	Primary Measuring Device		
PV	Primary Value	measured value	
USB	Universal Serial Bus		

# Notes

#### (SITRANS LUT400 compatible with PDM version 6.1)

# Features

SIMATIC PDM is a software package used to commission and maintain SITRANS LUT400 and other process devices. Please consult the LUT400 online help for details on using SIMATIC PDM. (More information can be found at <u>www.siemens.com/simatic-pdm</u>.)

SIMATIC PDM monitors the process values, alarms and status signals of the device. It allows you to display, compare, adjust, verify, and simulate process device data; also to set schedules for calibration and maintenance.

# Functions

#### Notes:

- For a complete list of parameters, see *Parameter reference (LUI)* in LUT400 operating instructions<sup>1</sup>.
- While the device is in PROGRAM MODE, the output remains active and continues to respond to changes in the device.

Parameters are identified by name and organized into function groups. The menu structure for SIMATIC PDM is almost identical to that of the SITRANS LUT400 LCD. See *LCD Menu Structure* in LUT400 operating instructions<sup>1</sup> for a complete list of parameters in chart format.

For a list of parameters that do not appear in the menu structure and are accessed via pulldown menus in SIMATIC PDM see page 25. See also *Changing parameter settings using SIMATIC PDM* on page 24 for more details.

Feature	page	Function
Quick Start (Level)	9	Device configuration for simple level applications
Quick Start (Volume)	12	Device configuration for simple volume applications
Quick Start (Volume - Linea	rization) 15	Device configuration for volume applications using complex vessel shapes
Quick Start (Flow)	19	Device configuration for simple flow applications
Pump Control Wizard	21	Pump control setup
Echo Profile Utilities	26	Echo profile viewing/comparison

<sup>&</sup>lt;sup>1.</sup> SITRANS LUT400 (HART) Operating Instructions (7ML19985MV01)

Feature (cont'd)	page	Function	
TVT Shaper 28		Manual TVT adjustment	
Auto False Echo Suppres	sion 29	Screen out false echoes	
Maintenance 31		Set schedules for device/sensor maintenance	
Process Variables	35	Monitor process variables and level trend	

# SIMATIC PDM version

Check the support page of our website to make sure you have the latest version of SIMATIC PDM, the most recent Service Pack (SP) and the most recent hot fix (HF). Go to:

http://support.automation.siemens.com/WW/ llisapi.dll?func=cslib.csinfo&lang=en&objiD=10806857&subtype=133100

# **Electronic Device Description (EDD)**

You can locate the EDD in Device Catalog, under **Sensors/Level/Echo/Siemens AG/ SITRANS LUT400**. (The EDD is written for forward compatibility.)

As a guideline to locate the correct EDD, the major and minor numbers should match between the EDD revision and the Firmware revision in the device (e.g. major and minor numbers in bold text: **1.00**.00-04).

To check it in PDM, go to SITRANS LUT400 HART > Identification > Device.

NS LUT400 HART		Value		
	» » Device	» » Device		
Intification	Manufacturer	Siemens		
- D	Product Name	SITRANS LUT400		
tenance and Diagnostics	Product	SITRANS LUT440 (OCM)		
mmunication	Order Number	7ML5050-0CA10-1DA0		
curity	Serial Number	DP2-40		
aracteristics	Final Assembly Number	0		
igoage	Hardware Revision	1.00.00-00		
	Firmware Revision	1.00.00-04		
	Loader Revision	2.00.00-??		
	EDD Version	1.00.00-10		
	Date of Manufacturing	20110907		
	Order Option	Standard		

Installing a new version of SIMATIC PDM requires the most recent Service Pack (SP) and the most recent hot fix (HF).

#### To install a new EDD

- Go to <u>www.siemens.com/sitransLUT400</u> > **Support > Software Downloads** to download the most up-to-date EDD from the product page of our website.
- Save the files to your computer and extract the zipped file to an easily accessed location.
- Launch SIMATIC PDM Manage Device Catalog, browse to and select the folder which contains the unzipped EDD file.

# **Configuring a new device**

#### Notes:

- The first time the device is configured, you will be prompted to select a language (English, German, French, Spanish or Chinese). To change the language again, use Language parameter [see *Parameter reference (LUI)* in LUT400 operating instructions<sup>a</sup>].
- Clicking on **Cancel** during an upload from device to SIMATIC PDM will result in some parameters being updated.
- Application Guides for setting up HART devices with SIMATIC PDM can be downloaded from the product page of our website at: <u>www.siemens.com/sitransLUT400</u>.
- a. SITRANS LUT400 (HART) Operating Instructions (7ML19985MV01)
- 1) Check that you have the most recent EDD, and if necessary update it (see *To install a new EDD* above).
- 2) Configure the device using the Quick Start Wizard. See *Quick Start Wizard via SIMATIC PDM* on page 7.

Before initiating a Quick Start Wizard to configure the device, you may wish to gather the necessary parameter values. Parameter Configuration Charts listing all parameters and available options for each application type are available on our website. Go to: <u>www.siemens.com/sitransLUT400</u> > **Support > Application Guides**. You can record data and select from options on the chart that apply to your application, then complete the *Quick Start Wizard via SIMATIC PDM* on page 7.

# **Quick Start Wizard via SIMATIC PDM**

**Note:** The layout of the dialog boxes shown may vary according to the resolution setting for your computer monitor.

The graphic Quick Start Wizard provides an easy step-by-step guide to help you configure the device for a simple application.

Please consult the operating instructions or online help for details on using SIMATIC PDM. (Application Guides for setting up Siemens HART instruments with SIMATIC PDM are available on our website: <u>www.siemens.com/processautomation</u>.)

- 1. If you have not already done so, check that you have the most up-to-date Electronic Device Description (EDD) for your instrument. (See *Configuring a new device* on page 7.)
- Launch SIMATIC Manager and create a new project for LUT400. (Application Guides for setting up HART devices with SIMATIC PDM can be downloaded from the product page of our website at <u>www.siemens.com/sitransLUT400</u>.)

 After opening object in SIMATIC PDM, set the product capabilities when prompted. If you do not know the model connected, click on Read Product Capabilities from Device, and the model will be automatically selected.

Product Capabilities - SITRANS LUT400	Product Capabilities - SITRANS LUT400
Product Capabilities	Product Capabilities
SIEMENS	SIEMENS
Product SITRANS LUT440 (OCM)	Product SITRANS LUT440 (OCM)
OK	OKHelp

This setting decides what parameters are visible from the PDM menus.

- 4. Open the menu **Device Master Reset** and click on **OK** to perform a reset to Factory Defaults.
- 5. After the reset is complete upload parameters to the PC/PG.
- 6. Configure the device via the Quick Start Wizard for your application.

#### **Quick Start Wizard steps**

#### Notes:

- The Quick Start wizard settings are inter-related and changes apply only after you click on **Apply and Transfer** at the end of the final step.
- Initial Quick Start parameter values are not default values and do not necessarily reflect the current device configuration.
- The format of date fields in PDM will reflect the user's operating system configuration.
- Click on BACK to return and revise setting or Cancel to exit the Quick Start.

Open the **Device** menu in SIMATIC PDM and select the Quick Start applicable to your application:



**Operation - PDM** 

- Quick Start (Level) (see page 9)
- Quick Start (Volume) (see page 12)
- Quick Start (Volume Linearization) (see page 15)
- Quick Start (Flow) (see page 19)

Follow steps within the wizard to configure your device.

## **Quick Start (Level)**

#### Step 1 – Identification

1. You can accept the default values without modification (TAG, Long TAG, Descriptor, Message, and Installation Date fields can be left blank),

OR

- 1. Click on **Read Data from Device** (if this is not the first time running the Quick Start Wizard).
- 2. The default Language is English. Select a different language value from the dropdown box if you wish to change the language displayed on the device.

Wizard - Quick Start (Level). Step 1 of 4: Identification	- STRANS LUT400
	SIEMENS
Application	These parameters are used to identify the device. The TAO should be unique in your application. To identify the device and to get all wizard parameters of the device, you can transfer the data from the device to SIMATIC PDM.
Ranges	Read Data from Device
Summary	Identify the device: TAG
	Descriptor
	Message
	Order Number 7ML5050-0CA10-1DA0
	Select the language for local user interface:
	Language English
Cancel < Back	Next > Help

3. After making all desired changes, click on Next.

#### Step 2 – Application

- 1. Select the Transducer that will operate with the LUT400.
- 2. Select the Application Type (Level, Space, Distance).

3. Select the Temperature Source (Transducer, Fixed Temperature, External TS-3, Average of Transducer and TS-3), and if Fixed, enter the Fixed Temperature value.

Wizard - Quick Start (Level)	SITRANS LUT400
Step 2 of 4: Application	
	SIEMENS
Identification	These parameters specify the application type you wish to execute, and its according settings.
Application	Select the Application Type:
Ranges	Transducer XRS-5
Summary	Application Type
	Temperature Source Transducer
	Fixed Temperature 20.0 degC
	•
Cancel < Back	Next > Help

4. Click on Next.

#### Step 3 - Ranges

1. Modify parameters as required.

Vizard - Quick Start (Level)	- SITRANS LUT400
Step 3 of 4: Ranges	
	SIEMENS
Identification	Select the settings for the ranges:
Application	Units m Y
Application	Low Calibration Point 60.000 m
Ranges	High Calibration Point 0.000 m x
Summary	Pesnance Pate Slow (0.1 m(min)
	0%-
	X - Low Calibration Point
	Y - High Calibration Point
Cancel < Back	Next > Help

2. Click on Next.

#### Step 4 – Summary

1. Check parameter settings, and click on **Cancel** to abort, or apply your changes.

**Operation - PDM** 

2. Click **Apply** to save your changes and return to the main menu, or click **Apply and Transfer** to save your changes and transfer settings to the device.

Wizard - Quick Start	(Level) SITRANS LUT400		
Step 4 of 4: Summary			
	SIEMENS		
Identification	n Parameter:	Old:	New:
Application Ranges Summary	Identification TAG Descriptor Message Installation Date Language Application Application Transduce Transduce Fixed Temperature Source Ranges Units Ever Galiteration Priori	Identification     SITRANS LUT400     English     Application     XrR-5     Level     Transducer     20 degC     Ranges     m     60 m	☐ Identification SITRANS LUT400 English Application XR8-5 Level Transducer 20 degC Ranges m 60 m
Cancel < Ba	High Calibration Polin Response Rate Overriew Sensor Model Current Output Function 4 mA Setpoint 20 mA Setpoint ck Apply Apply and Transfi	0 m 50w (0.1 m/min) Oven/ew Level 61 m Level 0 m 60 m	0 m Slow (0.1 m/min) Overview Level 61 m Level 0 m 60 m

The message Quick Setup was successful will appear. Click on OK.

Configuration via the SIMATIC PDM Quick Start Wizard for a Level application is now complete.

## Quick Start (Volume)

Use this wizard to configure volume applications employing standard vessel shapes.

Open the menu Device - Wizard - Quick Start (Volume):

#### Step 1 – Identification

1. You can accept the default values without modification (TAG, Long TAG, Descriptor, Message, and Installation Date fields can be left blank),

OR

- Click on Read Data from Device (if this is not the first time running the Quick Start Wizard).
- 2. The default Language is English. Select a different language value from the dropdown box if you wish to change the language displayed on the device.

	SIEMENS
Identification	These parameters are used to identify the device. The TAG should be unique in your application. To identify the device and to get all wizard parameters of the device, you can transfer the data from the device to SIMATIC FOM.
Application	ETTERS STRANS LUTAD
Vessel Shape	Read Data from Device
	Identify the device:
Ranges	TAG
Summary	Long TAG SITRANS LUT400
	Descriptor
	Message
	Installation Date
	Order Number 7ML5050-0CA10-1DA0
	Select the language for local user interface:
	Language English

3. After making all desired changes, click on Next.

#### Step 2 – Application

1. Select the Transducer that will operate with the LUT400. The **Application Type** defaults to **Volume**.

2. Select the Temperature Source (Transducer, Fixed Temperature, External TS-3, Average of Transducer and TS-3), and if Fixed, enter the Fixed Temperature value.

Wizard - (	Quick Start (Volume).	SITRANS LUT400	×
Step 2 of 5	: Application		
		SIEMENS	
	Identification	These parameters specify the application type you wish to execute, and its according settings.	
0	Application	Select the Application Type:	
	Vessel Shape	Transducer XRS-5	
	Rannes	Application Type Volume	
	r tangoo	Temperature Source Transducer	
*	Summary	Fixed Temperature 20.0 degC	
Cancel	< Back I	Next >	Help

3. Click on Next.

#### Step 3 - Vessel Shape

The vessel shapes shown are predefined.

To describe a more complex shape see *Quick Start (Volume -Linearization)* on page 15.



1. Select a Vessel Shape for your Volume application.

	SIEMENS	
Identification	Choose vessel shape:	
Application	vessel Snape	
Vessel Shape		
Ranges		
Summary		

2. Click on Next.

#### Step 4 - Ranges

1. Modify parameters as required. (Vessel Dimension A and L are required for certain Vessel Shapes selected in previous step.)

ep 4 of 5: Ranges	SIEMENS	
Identification Application	Select the settings for the ranges: Units m Low Calibration Point 60000 m	V
Ranges	High Calibration Point 0.000 m Response Rate Slow (0.1 m/min) v Volume Units I v	×
		X - Low Calibration Point Y - High Calibration Point

2. Click on Next.

#### Step 5 – Summary

- 1. Check parameter settings, and click on **Cancel** to abort, or apply your changes.
- 2. Click **Apply** to save your changes and return to the main menu, or click **Apply and Transfer** to save your changes and transfer settings to the device.

Wizard - Quick Start (Volume) SITRANS LUT400						
Step 5 of 5: Summary						
	SIEMENS					
Identification	Parameter:		Old:		New:	
Application Vessel Shape	Identification TAG Long TAG Descriptor Message		Identification SITRANS LUT400		Identification SITRANS LUT400	
Ranges	Installation Date Language Application Transducen Application Type		English Application XRS-5 Level		English Application XRS-5 Volume	
Summary	Temperature Source Fixed Temperature Vessel Shape Ranges Units Lew Celibration Roins		Transducer 20 depC Vessel Shape None Ranges m 60 m		Transducer 20 degC Vessel Shape Linear Ranges m 50 m	
	High Calibration Point Response Rate Volume Units Maximum Volume Vessel Dimension A		0 m Slow (0.1 m/min) I 100 I 0 m		0 m Slow (0.1 m/min) I 100 I 0 m	
	Vesser Onrehight E Overview Sensor Mode Far Range Current Output Function 4 mA Setpoint 20 mA Setpoint		0 m Level 61 m Level 0 m 60 m		Overview Volume 61 m Volume 0 I 100 I	
Cancel < Back	Apply Apply and Transfer					

The message Quick Setup was successful will appear. Click on OK.

Configuration via SIMATIC PDM Quick Start Wizard for a simple Volume application is now complete.

## Quick Start (Volume - Linearization)

Use this wizard to configure volume applications employing more complex vessel shapes.

#### Using Linearization via the Quick Start wizard

You can use the linearization feature to define a more complex vessel shape and enter up to 32 level breakpoints where the corresponding volume is known. The values corresponding to 0% and 100% levels must be entered. Breakpoints can be ordered from top to bottom or the reverse, but should be entered in the wizard from the bottom to the top of the vessel so that the characterization chart accurately reflects values as they are entered.

#### Example:



Note: values are for example purposes only.

Open the menu Device - Wizard - Quick Start (Volume - Linearization):

#### Step 1 – Identification

1. You can accept the default values without modification (TAG, Long TAG, Descriptor, Message, and Installation Date fields can be left blank),

OR

1. Click on Read Data from Device (if this is not the first time running the Quick Start Wizard).

2. The default Language is English. Select a different language value from the dropdown box if you wish to change the language displayed on the device.

Wizard - Quick Start (Volume	Linearization) SITRANS LUT400	X
Step 1 of 5: Identification		
	SIEMENS	
Identification	These parameters are used to identify the device. The TAG should be unique in your application. To identify the device and to get all wizard parameters of the device, you can transfer the data from the device to SIMATIC PDM.	
Application	ETTERNS LUTAD	
Vessel Shape	Read Data from Device	
	Identify the device:	
Ranges	TAG	
Summary	Long TAG SITRANS LUT400	
	Descriptor	
	Message	
	Installation Date	
	Order Number 7ML5050-0CA10-1DA0	
	Select the language for local user interface:	
	Language English 💌	
Cancel < Back	ext >Help	

3. After making all desired changes, click on Next.

#### Step 2 – Application

- 1. Select the Transducer that will operate with the LUT400. The **Application Type** defaults to **Volume**.
- 2. Select the Temperature Source (Transducer, Fixed Temperature, External TS-3, Average of Transducer and TS-3), and if Fixed, enter the Fixed Temperature value.

izard - (	Quick Start (Volur	ne - Linearization) SITRANS LUT400	Þ
Step 2 of 5	5: Application		
	1000	SIEMENS	
	Identification	These parameters specify the application type you wish to execute, and its according settings.	
0	Application	Select the Application Type:	
	Vessel Shape	Transducer XRS-5	
	Ranges	Application Type Volume	
	Tranges	Temperature Source Transducer	
+	Summary	Fixed Temperature 20.0 degC	
Cancel	< Back	Next > H	elp

3. Click on Next.

#### Step 3 – Vessel Shape

 In this step, there are two options: Linearization Table and Curve Table. Breakpoints will be entered in the same manner regardless of the table type selected, however a different algorithm is used for Curve Table, to smooth the lines between breakpoints. For example, use Curve Table when vessel sides are more rounded rather than straight angles. Make a selection and click on **NEXT.** 

Wizard -	Quick Start (Volume	- Linearization) SITRANS LUT400	×
Step 3 of	5: Vessel Shape		
		SIEMENS	
	Identification	Choose vessel shape:	
	Application	Vessel Shape Linearization Table 💌	
0	Vessel Shape		
	Ranges		
+	Summary		
Cance	l < Back	Next >	Help

#### Step 4 - Ranges

1. Modify parameters as required.

1000	SIEMENS
Identification	Select the settings for the ranges:
Antonio	
Application	Low Calibration Point 60.000 m
Vessel Shape	High Calibration Point 0.000 m
Ranges	Response Rate Slow (0.1 m/min)
Summary	Volume Units USgat
	Maximum Volume 26.417 USgal
	Linearization X - Low Calibration Point

- 2. Click on Linearization to set breakpoints.
- 3. In the **Linearization** window click on the appropriate **Breakpoint** tab to open the dialog window.

a. Enter the desired Level and Volume values, and click on OK.

Linearizat	ion - SITRANS LUT4	00					2
Breakpoin	s 1 · 8 Breakpoints 9 · 1	6   Break	points 17 · 24 B	reakpoints 25 - 32			
Level			Volume			Please populate Linearization Table from lowest to highest values	
Level(1)	0.000	m	Volume(1)	0.000	USgal	<u> </u>	
Level(2)	0.000	m	Volume(2)	0.000	USgal		
Level(3)	0.000	m	Volume(3)	0.000	USgal		
Level(4)	0.000	m	Volume(4)	0.000	USgal	Sn	
Level(5)	0.000	m	Volume(5)	0.000	USgal		
Level(6)	0.000	m	Volume(6)	0.000	USgal		
Level(7)	0.000	m	Volume(7)	0.000	USgal		
Level(8)	0.000	m	Volume(8)	0.000	USgal	0-1	
						0 10 20 30 40 50 60 Level [m]	
Units	m 💌		Volume Units	USgal 💌			
OK	Reset	Cancel				Help	

#### Notes:

- The Reset button resets values to the values in the offline table.
- When entering breakpoints via the wizard, values should be entered from the bottom to the top of the vessel so that the characterization chart accurately reflects values as they are entered.
  - To add points for Level and Volume equal to 0, enter these points first.
  - When using a linear table, add at least two points.
  - When using a curve table, add at least four points.
- If entering or modifying breakpoints via the parameter menu (after initial wizard is complete), ensure 2.6.1.Vessel Shape is set to Linearization Table prior to level/volume values being transferred, otherwise two uploads must be performed:
  - a) one to read Linearization Table as enabled,
  - b) and one to transfer breakpoint values.
- c. Back in the Step 4 of 5: Ranges window, click on NEXT.

#### Step 5 - Summary

- 1. Check parameter settings, and click on **Cancel** to abort, or apply your changes.
- Click Apply to save your changes and return to the main menu, or click Apply and Transfer to save your changes and transfer settings to the device.

The message Quick Setup was successful will appear. Click on OK.

Configuration via SIMATIC PDM Quick Start Wizard for a Volume application with a complex vessel shape is now complete.

### **Quick Start (Flow)**

#### Step 1 – Identification

1) You can accept the default values without modification (TAG, Long TAG, Descriptor, Message, and Installation Date fields can be left blank),

OR

- 1) Click on Read Data from Device (if this is not the first time running the Quick Start Wizard).
- 2. The default Language is English. Select a different language value from the dropdown box if you wish to change the language displayed on the device.

Wizard - Quick Start (Flow) SITRANS LUT400	×
Step 1 of 5: Identification	
SIEMENS	
Identification These parameters are used to identify the device. The TAO should be unique in your application. To identify the device and to get all wixard parameters of the device, you can be device the device from the device to ABM TO BPM.	
	2
Primary Device Shape	
Identify the device:	
Ranges TAG	
Summary Long TAG SITRANS LUT400	
Descriptor	5
Message	-
Installation Date	
Order Number 7ML5050-0CA10-1DA0	
Select the language for local user interface:	
Language English	
Cancel < Back Next > He	lp

3) After making all desired changes, click on Next.

#### Step 2 – Application

- 1) Select the Transducer that will operate with the LUT400.
- 2) Select the Temperature Source (Transducer, Fixed Temperature, External TS-3, Average of Transducer and TS-3), and if Fixed, enter the Fixed Temperature value.

Wizard - Quick Start (Fl	ow) SITRANS LUT400
Step 2 of 5: Application	
	SIEMENS
Identification	These parameters specify the application type you wish to execute, and its according settings.
Application	Select the Application Type:
Primary Device St	Transducer XRS-5
Ranges	Application Type Flow 👻
rangeo	Temperature Source Transducer
Summary	Fixed Temperature 20.0 degC
Cancel < Back	Next > Help

3) Click on Next.

#### Step 3 – Primary Device Shape

1) Select a Primary Measuring Device for your Flow application and change Units if desired.

Wizard -	Quick Start (Flow)	- SITRANS LUT400		×
Step 3 of	5: Primary Measuring Devic	*		
	1000	SIEMENS		
	Identification	Gelect the Flume or Weir shape.		
	Ampication	Primary Measuring Device	Of State Sta	
		Units	m •	
0	Primary Device Shape		<b>†</b>	
	Ranges		A STATE OF	
	-			
	sommery		June -	
			100 100 100 100 100 100 100 100 100 100	
			and the second s	
			$\checkmark$	
Cance	t Klack	Next >		Help

- 2. Additional parameter default values appear depending on the Primary Measuring Device selected. Modify as required.
- 3. Click on Next.

#### Step 4 - Ranges

1) Modify parameters as required.

Wizard - Quick Start (Flow)	- SITRANS LUT400		×
Step 4 of 5: Ranges			
	SIEMENS		
Identification	Select the settings for the ranges:	Configure the flow parameters.	
Application	Units m 💌	Maximum Head 60.000 m	
	Low Calibration Point 6.000 m	m Flowrate Units Us	
Primary Device Shape	High Calibration Point 0.500 m	m Flowrate Decimal no digits 💌	
Ranges	Response Rate Slow (0.1 m/min) 💌	Low Flow Cutoff 0.000 m	
Summary		Maximum Flow at 20mA 9999999.000	
	Linearization		
	4		
Cancel < Back	Next >	н	lelp

- If PMD selected in Step 3 was Universal Head Flow, the Linearization button will appear in Step 4. Click on Linearization to set Head and Flow Breakpoints, then click OK to return to the Step 4.
- 3. Click on Next.

#### Notes:

- If entering or modifying breakpoints via the parameter menu (after initial wizard is complete), ensure 2.15.1.Primary Measuring Device (PMD) is set to Universal Head Flow prior to head/flow values being transferred, otherwise two uploads must be performed:
  - a) one to read Universal Head Flow as enabled,
  - b) and one to transfer breakpoint values.

# **Operation - PDM**

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COMMUNICATIONS FOR SITRANS LUT400 (HART) - MANUAL

#### Step 5 – Summary

- 1. Check parameter settings, and click on **Cancel** to abort, or apply your changes.
- Click Apply to save your changes and return to the main menu, or click Apply and Transfer to save your changes and transfer settings to the device.

The message Quick Setup was successful will appear. Click on OK.

Configuration via SIMATIC PDM Quick Start Wizard for a Flow application is now complete.

# **Pump Control Wizard**

The Pump Control Setup Wizard provides an easy step-by-step guide to help you configure the pumps and relays for a simple application.

#### **Pump Control Wizard steps**

#### Notes:

7ML19985NE01

- Complete the appropriate Quick Start Wizard (Level, Volume, or Volume Linearization) prior to programming pump control.
- The Pump Control Setup Wizard settings are inter-related and changes apply only after you click on **Apply and Transfer** at the end of the final step.
- Initial Pump Control Wizard parameter values are not default values and do not necessarily reflect the current device configuration.
- Click on BACK to return and revise setting or Cancel to exit the Pump Control Wizard.

Launch SIMATIC PDM, open the menu Device - Wizard - Pump Control, and follow steps.

SIMATIC PDM - SITRANS LUT400 [Project: SITRANS LUT400 C:\Program Files\SIEMENS\STEP7\s7proj\Sitrans_]					
Parameter	Value				
» Identification					
TAG					
Long TAG	SITRANS LUT400				
Descriptor					
Message					
Installation Date					
» » Device					
Manufacturer	Siemens				
	Parameter           Parameter           » Identification           TAG           Long TAG           Descriptor           Message           Installation Date           » » Device           Manufacturer				

#### Step 1 – Application

1) Enable pump control, and select which relay is wired to Pump 1. (The relay for Pump 2 will be set automatically based on your selection for Pump 1.)

Wizard - Pi	ump Control SIT	RANS LUT400			×
Step 1 of 4:	Application				
		SIEMENS			
0	Application	Application			
		Read Data	from Device		
	Vessel Regime				
F	Pump Setpoints	Pump Control Enable	Disabled	•	
	Summary		,		
		Relay Purph 1	Rolay 2	-	
		Relay rump r		_	
		Relay Pump 2	Relay 3	-	
Cancel	< Back	Next >			Help

2. Click on Next.

#### Step 2 – Vessel Regime

1) Select the Pump Control Mode.

Wizard - Pump Control Sl	TRANS LUT400	X
Step 2 of 4: Vessel Regime		
	SIEMENS	
Application	Vessel Regime	
A Manual Decime	Pump Control Mode Alternate Duty Assist	
Vessel Regime	Service Ratio Pump 1 1	
Pump Setpoints	Service Ratio Pump 2 1	
Summary		
	•	
Cancel < Back	Next > Hel	р

- 2. If Service Ratio Duty Assist, or Service Ratio Duty Backup selected enter the Service Ratio for each pump.
- 3. Click on Next.

## Step 3 – Pump Setpoints

1) Enter the start level (ON Setpoint), and stop level (OFF Setpoint) for each pump, then click on **Next**.

Wizard - Pump Control SITRANS LUT400					
Step 3 of 4: Pump Setpoints					
	SIEMENS				
Application	Pump Setpoints				
	ON Setpoint Pump 1 0000 m				
Vessel Regime	OFF Setpoint Pump 1 0.000 m				
Pump Setpoints	ON Setsoint Pump 2 0.000 m				
Summary					
	OFF Setpoint Pump 2 0.000 m				
Cancel < Back	Next >	Help			

#### Step 4 – Summary

- 1. Check parameter settings, and click on **Cancel** to abort, or apply your changes.
- 2. Click **Apply** to save your changes and return to the main menu, or click **Apply and Transfer** to save your changes and transfer settings to the device.

Wizard - Pump Control SIT Step 4 of 4: Summary	RANS LUT400			
	SIEMENS			
Application	Parameter:	Old:	New:	
Vessel Regime Pump Setpoints Summary	Application Field Plans 1 Relie Plans 1 Relie Plans 2 Vessil Regime Pure Control Model Service Ratio Pure 1 Genere Ratio Pure 1 Control Bedonie Or Selpone Pure 1 OF Selpone Pure 2 OF Selpone Pure 2	Applie stated Pois abled Pelay 3 Vessel Regime Atternate Out/Assist 1 - - - - - - - - - - - - -	Application Disabled Poliny 2 Relay 3 Vessel Regime Attenate Duty Assist 1 Pump Setpoints 0 m 0 m 0 m	1
Cancel < Back	Apply Apply and Transfer			Help

Pump configuration via PDM Pump Control Wizard is now complete.

# **Changing parameter settings using SIMATIC PDM**

#### Notes:

- For a complete list of parameters, see *Parameter reference (LUI)* in LUT400 operating instructions<sup>a</sup>.
- Clicking on Cancel during an upload from device to SIMATIC PDM will result in some parameters being updated.
- a. SITRANS LUT400 (HART) Operating Instructions (7ML19985MV01)

Many parameters are accessed via the 5-level menu in PDM. See *Parameters accessed via pull-down menus* below for the others.

- Launch SIMATIC PDM, connect to SITRANS LUT400, and upload data from the device.
- 2) Adjust parameter values in the parameter value field and then press **Enter**. The status fields read **Changed**.
- Open the Device menu, click on Download to device, then use File Save, to save parameter settings. The status fields are cleared.



## Parameters accessed via pull-down menus

You have access to a number of functions via pull-down menus from the menu bar under Device or View.

#### For a complete list, see pull-down menus below.



#### **Pull-down menus**

Device menus	page	View menus	page
Communication path	-	Process Variables Device Status	35 38
Download to Device Upload to PC/PG Update Diagnostic Status	- -		
Set Address	26	Toolbar	
Wizard - Quick Start (Level) Wizard - Quick Start (Volume) Wizard - Quick Start (Volume - Linearization) Wizard - Quick Start (Flow) * Wizard - Pump Control	9 12 15 19 21	Status Bar	-
Echo Profile Utilities Maintenance Wear Flow Log * Totalizers * Set Pumps Runtimes * Auto Zero Head * Auto Sensor Offset Auto Sound Velocity Real Time Clock Product Capabilities Select Analog Output	26 31 32 32 32 32 33 33 33 33 33 33 33 33 33		
Loop-Test	34		
Master Reset Reset Min/Max Temperatures Reset Totalizers * Configuration Flag Reset HART Communication	34 35 35 35 35	Update	-

\* Selected menus visible only if Product Capabilities set to **Pump and Flow** or **OCM**.

# **Set Address**

Open the menu Device - Set Address to set device Polling Address.

(Loop current mode can be enabled to use HART Multi-drop Mode. For more details, see *HART multi-drop mode* in *General Operation* section of LUT400 operating instructions<sup>1</sup>.)

Set Address SITRANS LUT400 (Onlin	e) 🗙
Set Address	
SIEMENS	
Polling Address	
Loop current mode Enabled	
Transfer	
Close Messages	Help

# **Echo Profile Utilities**

Open the menu **Device – Echo Profile Utilities** and click on the appropriate tab for easy access to:

- Echo Profile
  - Echo profile saving on page 27 and Echo profile data logging on page 27
- View Saved Echo Profiles on page 27
- TVT Shaper on page 28
- Auto False Echo Suppression on page 29
- Echo setup on page 31

<sup>&</sup>lt;sup>1.</sup> SITRANS LUT400 (HART) Operating Instructions (7ML19985MV01)

#### Echo Profile

When the Echo Profile Wizard is launched from PDM, the current echo profile will display.

Echo Profile Utilities - SITRANS LUT400		
Echo Profile View Saved Echo Profiles TVT Shaper Auto False Echo Suppression Echo Setup		
SIEMENS	- ! -	
	Level Measurement Distance Measurement Near Range Confidence Echo Strength	1.100           0.300           4           0.9
	Algorithm	bLF Best of First and Largest Echo
U 1 2 3 4 5 Distance (m) ₩	Device Status	Primary variable outside the operating limits Non-primary variable outside the operating limits PPV Analog Channel Extanded PPV Analog Channel Extanded PMore status variable Cold start occured Sconfiguration changed prield device maifunctioned
	Resolution	Standard 💌
		Measure

Click on the Measure button to reload the profile. (Select Standard Resolution to update the profile faster. Detailed Resolution uploads all data points.)

**Note:** If a communication error exists, the profile will not display, and all parameter values will be set to 0.

#### Echo profile saving

#### Notes:

- Double click on each axis and record the Xscale and Data Scale values, so that you can restore the default view by resetting to these values.
- You can save a profile or delete a saved profile.
- After saving a profile click on **Close**, not the **x** button, to close the Echo Profile Utilities window: otherwise the profile will not be saved.
- After saving a profile go to View Saved Echo Profiles tab to view it.

#### Echo profile data logging

You can store up to 60 profiles at a selected interval (maximum 60 minutes). Inside Echo Profile Utilities, in the **Echo Profile Time Based Storage** window:

- Enter the desired interval between stored profiles.
- Enter the desired number of profiles to be stored (maximum 60).
- Click on Start. A message appears warning of the time delay and warning that all
  previous saved profiles will be overwritten. Click on OK to proceed. The new profiles
  will be saved with their date and time.

#### View Saved Echo Profiles

To view saved profiles, click on Saved Echo Profiles, and select a profile. The selected profile with associated parameter values will display.

#### **TVT Shaper**

**Note:** Double click on each axis and record the Xscale and Data Scale values, so that you can restore the default view by resetting to these values.

This feature allows you to manually adjust the TVT curve to avoid false echoes caused by obstructions. (For an explanation see *Auto False Echo Suppression* on page 29.)

Open the menu Device - Echo Profile Utilities and click on the tab TVT Shaper.

When TVT Shaper tab is selected, the current echo profile and its associated parameters will display, allowing setup of the TVT manually.



Note: If a communication error exists, the profile will not display.

- Turn Shaper Mode **On**.
- Press **Measure** to refresh the echo profile and load the current TVT curve from the device.
- Change the position of the cursor on the TVT curve using the Point+ and Pointbuttons: raise and lower the curve using Offset+ and Offset-.
- Alternatively, enter values for Point and Offset directly into the dialog boxes.
- Press Transfer to Device.

Note:

• If steps are repeated (measurement taken a second time) without first transferring shaping adjustments to the device, initial shaping will be lost.

#### Auto False Echo Suppression

#### Notes:

- Make sure material level is below all known obstructions at the moment Auto False Echo Suppression is used to learn the echo profile. We recommend an empty or almost empty vessel.
- Note the distance to material level when the environment is learned, and set Auto False Echo Suppression Range to a shorter distance to avoid the material echo being screened out.

If you have a vessel with known obstructions, we recommend using Auto False Echo Suppression to prevent false echo detection. This feature can also be used if the device displays a false high level, or the reading is fluctuating between the correct level and a false high level.

The device learns the echo profile over the whole measurement range and the TVT is shaped around all echoes present at that moment. [See *2.12.3.4.Shaper Mode* in LUT400 operating instructions<sup>1</sup> for a more detailed explanation.]

The learned TVT will be applied over a specified range. The default TVT is applied over the remainder of the measurement range.

Echo Profile Utilities - SITRANS LUT400						
Echo Profile   View Saved Echo Profiles   TVT Shaper Auto False Echo Suppression   Echo Setup						
SIEMENS						
Auto False Echo Suppression On 💌						
Auto False Echo Suppression Range 1.000 m						
Learn Select						
Transfer to Device Learn						
This will learn a new echo protile, once done it can not be undone.						
lő:K (Cancel						
ОК Нер						

- 1) Make sure the material level is below all known obstructions.
- 2) Determine Auto False Echo Suppression Range. Measure the actual distance from the sensor reference point to the material surface using a rope or tape measure. Subtract 0.5 m (20") from this distance, and use the resulting value.
- Open the menu Device Echo Profile Utilities and click on the tab Auto False Echo Suppression.
- 4) Enter the value for Auto False Echo Suppression Range and select On.
- 5) Click on Learn. The message appears: 'This will learn a new TVT. Once done it cannot be undone'. Click on OK.

<sup>&</sup>lt;sup>1.</sup> SITRANS LUT400 (HART) Operating Instructions (7ML19985MV01)

- 6) Once Auto TVT is complete, click on **Transfer to Device.** To exit, click on **Close**. Auto TVT is enabled and the learned TVT will be used.
- To turn Auto False Echo Suppression off or on, reopen the Auto False Echo Suppression window, change the Auto False Echo Suppression to On or Off, and click on Transfer to Device.



#### Echo setup

1. Select the Echo Setup tab to configure echo processing related product parameters.

	Tche Prefile Unities - StiTtANS LUT400					
	Echo Prolie   View Saved Echo Prol	lies   TVT Shaper   Auto False Echo Suppression   Echo Sel	e			
	SIEMENS		- <b>I</b> -			
algorithm echo threshold reform echo narrow echo filter damping filter fill rate/min. empty rate/min.	Echo Baler Echo Baler Echo Theosol Echo Theosol Reserve Echo 7 Der -Rige Tradition 7 Der -Rige Deneman Franz Frä Thale per Minche Erroch Tale ser Minche Tradition Schlause Tradition Schlause	104 204 44 44 44 44 44 44 44 44 44 44 44 44 4	False False Colt Theor Related Level Fals Stark Value Temperature Source False Temperature Source Vencley 4/20 express Noted Vencley 4/20 express	100 9 1000 9 100000000 9 100000000 9 10000000 9 0 (14433 000	n N	LOE timer material level fail-safe mA value temp. source fixed temp. sound vel. at 20 °C
	Close				Help	

# Maintenance

You can set schedules for:

- maintenance of the device based on its projected lifetime
- maintenance of the sensor based on its projected lifetime
- service
- calibration

#### To set Device/Sensor Maintenance schedules:

Maintenance - STTRANS LUT400		
Remaining Device Lifetime Remaining Sensor Lifetime Service Schedule Calibration Schedule		
SIEMENS		• <b>II</b> •
Time Units	Years	
Lifetime (Expected)	10.000	Years
Time in Operation	0.022	Years
Remaining Lifetime	9.978	Years
Activation of Reminders	•	
Reminder 1 before Lifetime (Required)	0.164	Years
Reminder 2 before Lifetime (Demanded)	0.019	Years
Read		
Write		]
Snooze for 1 year		]
OK Cancel		Help

- Open the menu Device Maintenance, and click on the Remaining Device/Sensor Lifetime tab.
- 2) Modify desired values, and if desired, set reminders for either or both of **Reminder 1** (Required)/Reminder 2 (Demanded)
- 3) Click on Write.
- 4) Click on **Read**, to see the effects of your modification.
- 5) Click on Snooze for 1 year to add a year to the Lifetime (Expected).

#### To set Service/Calibration schedules:

- Open the menu Device Maintenance, and click on the Service/Calibration Schedule tab.
- Modify desired values, and if desired, set reminders for either or both of Reminder 1 (Required)/Reminder 2 (Demanded).
- 3) Click on Write.
- 4) Click on **Read**, to see the effects of your modification.
- 5) Click on Service/Calibration Performed to reset the schedule.

#### Wear

Reports the number of days the device has been operating, and the number of times it has been powered up.

Open the menu Device - Wear to view:

- Powered-on Time
- Power-on Resets

#### Flow Log

Set flow logging mode, with intervals and setpoints for standard and rapid flow rates.

Open the menu **Device** – Flow Log to view:

- Flow Log Mode
- Standard Flow Log Interval
- Standard Flow Log Setpoint
- Rapid Flow Log Interval
- Rapid Flow Log Setpoint

#### Totalizers

Two different totalizers can be setup: OCM Flow Totalizer, Pumped Volume Totalizer.

#### Open the menu Device - Totalizers to view:

#### OCM Flow Totalizer

- Totalizer Decimal Position
- Totalizer Multiplier
- Low Flow Cutoff

#### Pumped Volume Totalizer

- Totalizer Decimal Position
- Totalizer Multiplier

#### **Set Pump Runtimes**

Set runtime for each pump.

Open the menu Device - Set Pump Runtimes to view:

- Run Time Relay 2
- Run Time Relay 3
#### **Auto Zero Head**

Enter the actual head value to have Head Measurement calculated and an offset entered if necessary.

Open the menu Device - Auto Zero Head to view:

- Zero Head Offset (read only)
- Head Measurement (read only)
- Actual Head Value

Click the button 'Set Zero Head' when the Actual Head Value differs from the Head Measurement to automatically adjust Zero Head.

## Auto Sensor Offset

Enter the actual distance value to have Distance Measurement calculated and a sensor offset entered if necessary.

Open the menu Device - Auto Sensor Offset to view:

- Sensor Offset (read only)
- Distance Measurement (read only)
- Desired Distance for Auto Sensor Offset

Click the button 'Transfer' when the Desired Distance for Auto Sensor Offset differs from the Distance Measurement to automatically adjust Sensor Offset.

## Auto Sound Velocity

Enter the actual distance value to have the Distance Measurement calculated and speed of sound adjusted if necessary.

Open the menu Device - Auto Sound Velocity to view:

- Sound Velocity at 20 degrees C (read only)
- Distance Measurement (read only)
- Desired Distance for Auto Sound Velocity

Click the button 'Transfer' when the Desired Distance for Auto Sound Velocity differs from the Distance Measurement to automatically adjust Sound Velocity at 20 degrees C.

## **Real Time Clock**

Use to view and change the date and time in the device.

## **Product Capabilities**

Allows you to set the product capabilities of the device (Level, Pump and Flow, OCM), or read the product capabilities from the device.

- 1) Open the menu **Device Product Capabilities**.
- 2) Select product capability from the drop-down box, or click on button **Read Product Capabilities from Device**.
- 3) Click on **OK** to save.

## Select Analog Output

Allows you to set the mA Output to report Level, Distance, or Space.

- 1) Open the menu **Device Select Analog Output**.
- 2) The Select Analog Output window displays the current setting: click on OK.
- 3) Select a different setting and click on **OK**.
- 4) The Select Analog Output window displays the new setting: click on OK.

# Loop-Test

**Note:** The simulated AO (Analog Output) value influences output to the control system. Be sure to disconnect any pumps/processes before entering simulation.

Allows you to input a simulated value (4 mA, 20 mA, or a user-defined value) in order to test the functioning of the mA connections during commissioning or maintenance of the device. (The range is 3.5 mA to 22.8 mA: see *2.12.Signal Processing* in LUT400 operating instructions<sup>1</sup>.)

To simulate a user-defined mA value:

- 1) Open the menu **Device Loop-Test**.
- 2) Select **Other**, enter the new value, and click on **OK**. The message 'Field Device fixed at [new value]' appears. Click on **OK**. The Loop-Test window remains open.
- 3) When you are ready to end simulation, select **End** and click on **OK** to return the device to the actual output value.

## Master Reset

## **Factory Defaults**

Factory Defaults resets all parameters to the default settings with the following exceptions:

- all identification parameters (see 3.1.Identification in LUT400 operating instructions<sup>1</sup> for a list)
- Device Address
- Write Protection
- Learned TVT curve
- Auto False Echo Suppression Range
- Shaper Mode
- TVT Shaper breakpoints
- 1) Open the menu **Device Master Reset**, select **OK** to perform a reset to Factory Defaults.
- After the reset is complete upload parameters to the PC/PG. (If you are performing a reset after replacing the device with a different device, do not upload parameters to the PC/PG).

<sup>&</sup>lt;sup>1.</sup> SITRANS LUT400 (HART) Operating Instructions (7ML19985MV01)

#### **Reset Min/Max Temperatures**

To reset the minimum/maximum temperatures, open the menu **Device – Reset Min/Max Temperatures** and perform a reset.

## **Reset Totalizers**

To reset the LCD current and daily totalizers to zero, open the menu **Device – Reset Totalizers** and perform a reset.

#### **Configuration Flag Reset**

To reset the configuration flag, open the menu **Device – Configuration Flag Reset** and perform a reset.

#### **HART Communication**

Sets the number of request/response preambles (default 5).

We recommend you do not change this value.

# **Process Variables**

#### **Overview**

To compare outputs in real time, open the menu **View – Process Variables** and click on the **Overview** tab to see reading (level, space, distance); analog output; range and loop current.

Process Variables				
4.886 m	Space Measurement 0.614 m	Distance Measurement 1.114 m	Flow Measurement 0 L/s	
5.500	6.000	6.000	9999999	
2.750	3.250	3.000	5000000	
0.000	0.500	0.000	0	
The above value will	not correspond to mA outpu	t while in fixed current mode.		
Range [	0.000 %			
Loop current	4.000 mA			
L				

## Temperature

To see current, highest and lowest process temperatures, click on the Temperature tab.

Process Variables - SITRANS LUT400 (Online)	X
Overview Temperature Totalizers Trend View Discrete Inputs and Relays	
SIEMENS	
Process Temperature 24.8 degC	
Highest Value 24.7 degC	
Lowest Value 22.7 degC	
Close Messages	Help

## Totalizers

To see OCM Flow and Pumped Volume Totalizers, click on the **Totalizers** tab.

Process Variables - SITRANS LUT400 (Online)	×
Overview Temperature Totalizers Trend View Discrete Inputs and Relays	
SIEMENS -	
OCM Flow Totalizers	
Daily Totalizer	
Running Totalizer 0.00	
Pumped Volume Totalizer	
Running Totalizer 0.00	
Close Messages	Help

#### **Trend View**

Click on the **Trend View** tab to view trend lines.

Process Variables - STRANS LUT400 (Online)  Overview   Temperature   Totalzers   Tend View   Discele Inputs and Releys	4 trend lines can be
SIEMENS	monitored: (distinguished by color in SIMATIC PDM).
Level Measurement 0.513 m Distance Measurement 1.113 m Flow Measurement 0.Us	
Close Messages Help	

The Primary Variable (PV) is one of six process variables set in *2.5.1.Current Output Function.* [Refer to *Parameter reference (LUI)* in LUT400 operating instructions<sup>1</sup>.] Trend lines can display Level, Space, Distance, Volume or Flow.

## **Discrete Inputs and Relays**

The Discrete Inputs and Relays tab displays programmation and state for DIs and relays.

ocess Variables - SITRANS L	UT400 (Onlin	ne)			×
Overview   Temperature   Totalizer	Trend View	)iscrete In	puts and Relays		
SIEMENS					- D-
Relay Programmed State					
Relay 1 Programming	Disabled	Ÿ	Relay 1 Activated	Off	3
Relay 2 Programming	Disabled	v	Relay 2 Activated	Off	3
Relay 3 Programming	Disabled	v	Relay 3 Activated	orr	3
Discrete Input Programmed	State				_
Discrete Input 1 Programmin	Disabled	v	Discrete Input 1 Scaled State	Off ·	
Discrete Input 2 Programmin	Disabled	Y	Discrete Input 2 Scaled State	Off	-
Close Messages					Help

<sup>&</sup>lt;sup>1.</sup> SITRANS LUT400 (HART) Operating Instructions (7ML19985MV01)

## **Device Status**

Open the menu **View – Device Status** to view Diagnostics, Device Status, Hardware/ Firmware (HW/FW) Status, and Maintenance status.

Device Status - S	ITRANS LUT400 (Online)	×
Diagnostics Devi	ce Status   HW/FW/Status   Maintenance	
SIEMENS		
Communication	Ø90od □Failed	
Device Status	Dodo     Device in first mode     Device rended     Device synthese in the standard in the standard intervence     Dod of service approximation	
Last Check	11/0/2011 10:41:22 AM	
Message Text	>> Configuration changed - Configuration	
	Update diagnostics	
Close	essages	Help

In the Diagnostics window, click on **Update diagnostics** to update diagnostic information and refresh linked icons.

# Update

Open the menu View – Update to refresh the screen.

# Features

The web browser interface in SITRANS LUT400, designed to work with Windows XP, makes monitoring and adjustments easy. Internet Explorer installed on a computer can be used to configure the SITRANS LUT400, and the Web Server *Abyss* is supplied for your convenience. The web browser is available in English only.

# Functions

SITRANS LUT400 parameters organized into six main function groups allow you to configure and monitor the device:

- Identification
- Setup
- Maintenance and Diagnostics
- Communication
- Security
- Language

See *Browser Menu Parameter Function Groups* on page 44 for a list<sup>1</sup> of parameters that can be configured via the web browser interface.

# Installation

To install the USB driver and web browser interface, use the small DVD provided with the device (or go to: <u>www.siemens.com/sitransLUT400</u> and click on **Support>** Software Downloads).

# Installing the USB driver

To install the driver:

- 1. Insert DVD provided into your computer DVD drive.
- 2. Connect SITRANS LUT400 to your computer via the USB cable and apply power to the device.
- 3. On the *Found New Hardware Wizard* window, select option to **Install from a list or specific location**, and click **Next**.
- 4. When prompted to choose your search and installation options, select *Search for the best driver*, and *Include this location in the search*, then click **Browse**.
- Navigate to the DVD drive on your computer (typically D:/ or E:/) to browse the DVD supplied. Navigate to Continuous Measurement>Ultrasonic Controllers>Software and support>SITRANS LUT400 and select the file usbser\_x.xx.xx-xx.inf (where x.xx.xx-xx is the version). Click OK.
- 6. Click **Next** in the *Hardware Wizard*.
- 7. Click **Continue Anyway** on the *Hardware Installation* window.
- 8. Click Finish to close the Hardware Wizard.

Installation of the USB driver is now complete.

<sup>&</sup>lt;sup>1</sup> The menu structure for the web browser interface is almost identical to that of the LCD.

# Installing the web browser interface

To install the web browser:

- Use Windows Explorer to browse to the installation file on your computer DVD drive: Continuous Measurement>Ultrasonic Controllers>Software and support >SITRANS LUT400\SITRANS\_LUT400\_HA\_BROWSER\_DD\_x\_xx\_xx\_exe (where x\_xx\_xx\_xx is the version).
- 2. Double-click the .exe file to install the web browser.

🔚 Setup - SITRANS LUT40	D HART Browser Interface
SIEMENS	Welcome to the
	SITRANS LUT400 HART Browser Interface
	Setup Wizard
	This will install SITRANS LUT400 HART Browser Interface on your computer.
	Version: 1.00.00-00
0 6	It is recommended that you close all other applications before continuing,
	Click Next to continue, or Cancel to exit Setup.
	Cancel

Click Next.

- 3. Read and accept the Siemens licence agreement, then click Next.
- 4. Browse to, or accept the default file location (recommended), where the web browser will be installed, then click **Next**.
- 5. On the *Select Start Menu Folder* window, browse to desired folder, or accept the default folder (recommended), then click **Next**.
- 6. Click **Install**. You will be prompted to confirm the installation of the *Abyss Web Server*. Click **OK**.
- 7. Read and agree to the *Abyss Web Server licence agreement*.
- 8. Check only the Abyss Web Server (required) component to install, and click Next.

👸 Abyss Web Server X1 Setu	ıp: Installation Options 📃 🗆 🗙
This will install Abyss Web S	erver X1 on your computer.
Select components to install:	Abyss Web Server (required) SSL Support ASP.NET Support Documentation Start Menu Shortcuts
Space required: 607.0KB	
Cancel Version	2.5 < Back Next >

- 9. Browse to desired folder, or accept the default destination folder (recommended), for the Abyss Web Server installation, then click **Install**.
- 10. On the *Abyss Web Server Startup Configuration* window, select **Manual Startup**. Click **OK**.

- 11. When prompted to start the Abyss Web Server click **No**, and on the next window showing installation *Completed*, click **Close**.
- 12. Click **Finish** to exit the Setup Wizard.

Installation of the Browser is now complete.

# Accessing the device via the web browser

Before accessing the device via the browser for the first time, you must know the communication port (COMPORT) to which the device is attached. This information can be found in the Device Manager on your computer.

#### **Communication port setting**

- Go to Start > Settings > Control Panel and double-click System to open the properties window. Click on Device Manager located on the Hardware tab.
- Open Ports (COM & LPT) and note the COM number assigned to USB CDC serial port emulation.

To access the device via the web browser, double-click the desktop shortcut SITRANS LUT400,



or go to **Start > Programs > SITRANS LUT400 HART Browser Interface** (created during the installation process). The Abyss server will autostart (if not already running) and the following window will appear:



Select the COMPORT that the device is connected to on your computer from the drop-down box. (This is the COMPORT number noted above in step 2 of *Communication port setting*.) The

COMPORT must only be entered once, when initially accessing the device. The comport setting will be retained by the computer for all LUT400 devices that are connected in future.

**Note:** The web browser interface will only work with a device configured using COMPORT 1 to 9.

The menu on the left will display after a few seconds, and reflects a general configuration at this point.

Click on **Connect to device**. The following screen will appear. [SITRANS LUT440 (OCM) device is shown here for example purposes.]



Click on Home to update menu, based on your device configuration.

# Changing parameter settings using the browser

To enter parameter values, click on a bulleted function group on the left of the window. Parameters will display on the right, or the function group on the left will expand to show more levels. (Click on Home to collapse all parameter function groups.)

1	C LUT400 Configuration -	Main - Microsoft Internet Explorer provided by A&D F	PI5 NS	
	GO . http://localh	ost:60000/	Siemens Search	P.
	File Edit View Favorites	Tools Help		1.11
	😭 Favorites 🖉 LUT400 Co	nfiguration - Main	🛅 🔹 🖾 🚽 📾 👻 Page 🖌 Safety 🗸	Tools - 🔞 - "
narameter	SIEMENS	LUT400 Configuratio	Browser Interface Revision:	1.00.00-00
paramotor	nd Home	Remaining Davies Lifetime		
menu	SITRANS LUT440 (OCI			
levels 🔨	Identification Setup Maintenance and	Lifetime (Expected) 10 Years	_	
	Diagnostics	Time in Operation 0.064 Years	value field	
	• Diagnostics • Maintenance ∞ Remainit	Remaining Lifetime 9.936 Years		
	Device Lifetime	Activation of Reminders Off	×	
	<ul> <li>Remainin Sensor Lifetime</li> </ul>	Reminder 1 before Lifetime (Required) 0.164	Years drop-dow	n box
	<ul> <li>Service</li> </ul>	Reminder 2 before Lifetime (Demanded) 0.019	Years	
	<ul> <li>Calibrati</li> <li>Scheduk</li> </ul>	Maint Stat OK		
	<ul> <li>Alarms and Device Status</li> </ul>	Ack Status Unacknowledged		
	Communication Security Language	Ack Do Nothing		
		Tou must click the "Transfer to Device" button to write you Refresh Transfer to Device	ur changes to the device	
	<			
			Secol intranet	af 100% •
			liek to apply abangoa	

∕click to apply changes

To edit a parameter value, click on the value field and type a value, or select from the dropdown box.

As you enter values on each menu level, click **Cancel** to abort or **Transfer to Device** to apply your changes.

# **Configuring a new device**

To configure the SITRANS LUT400 for a simple application, navigate through the parameter function groups and enter values suited to your application. The Browser menu structure is very similar to the LCD Menu Structure. [See *LCD Menu Structure* for a complete list of parameters in chart format, and for more detailed explanations of each parameter, see *Parameter reference (LUII*) in the LUT400 operating instructions<sup>1</sup>.

**Operation - Browser** 

<sup>&</sup>lt;sup>1.</sup> SITRANS LUT400 (HART) Operating Instructions (7ML19985MV01)

# **Browser Menu Parameter Function Groups**

#### Notes:

 Below is a list of parameter function groups (not individual parameters) available on the browser. A parameter number is referenced for more information on the parameters within each function group.

 An asterisk (\*) in the left column means this parameter or function group will not display on the browser menu unless the SITRANS LUT400 is configured for Pump and Flow\* or OCM\* at startup, and the device connected supports this functionality.

*	Paramete	Parameter Number	
	<b>IDENTIFIC</b>	ATION	3.1
	Devi	ce	
	Setup		2
	Sens	sor	2.1
	Calib	pration	2.2
	Rate		2.3
	Fail-S	Safe	2.4
	Curre	ent Output	2.5
		Current Output Function	
		Current Output Setup	
	Volu	me	2.6
		Level and Volume Breakpoints	
	Pum	ps	2.7
		Basic Setup	
		Modifiers	
v.		Wall Cling Reduction	
*		Energy Savings	
*		Pump Run-Un	
*		Pump Start Delays	
*	A1	lotalizers	0.0
	Alarr	ns	2.8
		High Level Alarm	
		Low Level Alarm	
		Switch (DI) Alarm	
		Out of hounda Loval Alarm	
		Low Temperature Alarm	
	+ $+$ $-$		
*		High Flowrate Alarm	
*			

(conťd)	Parameter Function Group	Parameter Number
	Discrete Inputs	2.9
	Backup Level Override	
	Discrete Input Logic	
*	Pump Interlock	
	Data Logging	2.10
	Process Value Log	
	Alarm Log	
*	Flow Log	
	Other Control	2.11
	Elapsed Time Relay	
	Time of Day Relay	
*	External Totalizer	
*	External Sampler	
	Signal Processing	2.12
	Temperature and Velocity	
	Echo Select	
	TVT Setup	
	TVT Shaper	
	Measured Values	
	Display	2.13
	LCD Contrast	
	Date and Time	2.14
	Daylight Saving	
*	Flow	2.15
	Auto Zero Head	
	Basic Setup	
	PMD Dimensions	
	Universal Head vs Flow	
*	Totalizers	2.16
	MAINTENANCE AND DIAGNOSTICS	3
	Diagnostics	3.2
	Pump Records	
	Temperature Peak Values	
	Echo Quality	
	Maintenance	3.3
	Remaining Device Lifetime	
	Remaining Sensor Lifetime	
	Service Schedule	
	Calibration Schedule	
	Alarms and Device Status	а

(conťd)	Parameter Function Group	Parameter Number
	COMMUNICATION	4
	Security	5
	LANGUAGE	6

<sup>a.</sup> This menu displays an Alarm Summary and Device Status (list of any detected faults) that would otherwise be displayed on the optional LCD.

# Operation via AMS Device Manager (HART)

# (SITRANS LUT400 compatible with AMS version 10.5 and higher)

# Features

AMS Device Manager is a software package used to commission and maintain SITRANS LUT400 and other process devices. Please consult the LUT400 online help, or the manufacturer's operating instructions for details on using AMS Device Manager. (You can find more information at <a href="http://www.emersonprocess.com/AMS/">http://www.emersonprocess.com/AMS/</a>.)

AMS Device Manager monitors the process values, alarms and status signals of the device. It allows you to display, compare, adjust, verify, and simulate process device data. The graphic interface in SITRANS LUT400 makes monitoring and adjustments easy.

# Functions

Parameters organized into three main function groups allow you to configure and monitor the device:

- Configure/Setup
- Device Diagnostics (read only)
- Process Variables (read only)

See *AMS Menu Structure* on page 76 for a chart<sup>1</sup> and *Changing parameter settings using AMS Device Manager* on page 66 for more details.

Feature	page	Function
Wizard - Quick Start (Level)	53	Device configuration for simple level applications
Wizard - Quick Start (Volum	e) 55	Device configuration for simple volume applications
Wizard - Quick Start (Volum Linearization)	e - 58	Device configuration for volume applications using complex vessel shapes
Wizard - Quick Start (Flow)	61	Device configuration for simple flow applications
Wizard - Pump Control	64	Pump control setup
Echo Profile	69	Echo profile viewing

The menu structure for AMS Device Manager is almost identical to that for the SITRANS LUT400 LCD.

Feature (cont'd)	page	Function
TVT Setup	70	Screen out false echoes
Process Variables View	74	Monitor process variables and level trend
Security	72	Protect security and communication parameters from modification by the maintenance user

# Electronic Device Description (EDD)

SITRANS LUT400 requires the EDD for AMS Device Manager version 10.5.

You can locate the EDD in Device Catalog, under **Sensors/Level/Echo/Siemens/SITRANS LUT400**. Check the product page of our website at <u>www.siemens.com/sitransLUT400</u>, under **Support->Software Downloads**, to make sure you have the latest version of the EDD for AMS Device Manager. If you need to install a new EDD, see *Configuring a new device* below.

# Configuring a new device

- Check that you have the most recent EDD, and if necessary download it from the product page listed above. Save the files to your computer, and extract the zipped file to an easily accessed location.
- Launch AMS Device Manager- Add Device Type, browse to the unzipped DD file, and select it.

# Startup

1.

Launch AMS Device Manager.

(Application Guides for setting up HART devices with AMS Device Manager can be downloaded from product page of our website at <u>www.siemens.com/sitransLUT400.</u>)

- 2) In **Device Connection View,** right-click on the device icon and select **Scan Device** to upload parameters from the device.
- Double click the device icon to open the startup screen. The startup screen shows device identification details, and a navigation window on the left-hand side of the screen.

le Actions Help	ANS LUT400 Rev. 1]		
# B. #			
Configure/Setup  Configure/Setup  Videntification  Vident	Identification   SIEMENS TAG Lang TAG SITRANS LUT400	ETTER STAND UT 20	CONFIGURATION CHANGED
	Descriptor Message Date p1/01/1899 Decke Municiphore		Loude Davison
	Siemens	DP2-40 Final Assembly Number	2.00.00-00 EDD Version In 22.00.00
Configure/Setup	Product SITRANS LUT440 (0CM)	Hardware Revision	Date of Manufacturing 20110907
Process Variables	Order Number [7ML5050-0CA10-1DA0	Firmware Revision [0.23.01-00	Order Option Standard

4) Configure the device using the Quick Start Wizard. See *Quick Start Wizards via AMS Device Manager* on page 52.

Before initiating a Quick Start Wizard to configure the device, you may wish to gather the necessary parameter values. Parameter Configuration Charts listing all parameters and available options for each application type are available on our website. Go to: <a href="http://www.siemens.com/sitransLUT400">www.siemens.com/sitransLUT400</a> Support > Application Guides. You can record data and select from options on the chart that apply to your application, then complete the *Quick Start Wizards via AMS Device Manager* on page 52.

# **Master Reset**

• Navigate to Configure/Setup > Operation > Reset

Action menu items

- Click on **Master Reset** and click **Next** to perform a reset to Factory Defaults (or click **Cancel** to abort).
- Scan device (see below).

# **Pull-down menu access**

/08/2011 12:54:03.967 12:01	RANS LUT400 Rev. 11		ne.
Actions Help			
Configure/Setup			
Compare			
Clear Office	Identification		
Evoness Variables			
Scan Device			
Collection Management A	SIEMENS		CHANGED
Californi Hanayerien	140	STRANS UP 400	
Rename	1758	-	
Unassign	Luna TAC		
P.1940.0	SITRANS LUT400		
Audit Trai			
Record Manual Event	Descriptor		
Help			
	Message		
	Date for on creat		
	protries		
	Device		
	Manufacturer	Serial Number	Loader Revision
	[Sellens _	- presu	200000
	Product Name	Final Assembly Number	EDD Vention
Configure /Setup	ISTIMANS LUT400		1220000
contriguine, in cosp	Product	Hardware Bevision	Date of Manufacturing
Device Diagnostics	ISITRANS LUT440 (OCM)	- hanna	pan rusav
	Order Number	Firmware Revision	Order Option
Process variables	7ML5050-0CA10-1DA0	0.23.01-00	Standard

A pull-down menu under Actions gives alternative access to several features.

# **Scan Device**

• Open the menu Actions > Scan Device.

Scan Device uploads parameters from the device (synchronizes parameters).

# **Device configuration**

1) Navigate to **Configure/Setup > Operation** and click on any of the Operation submenus to open the dialog window.

N	laster Reset		
It/06/2011 12:54:03.967 (STRA     k Addox Hele     k Addox Hele     k Addox Hele     Configure/Setup     Gonfigure/Setup     Gonfigure/Setup	Reset SIEMENS Master Reset Coofiguration Flag Reset	Long TAG [STRANS LUT400 	CONFIGURATION Reset MayNax Temperatures Reset MayNax Temperatures Reset Daily Totalcer Reset Running Totalcer Reset Running Totalcer Reset Running Totalcer
Configure/Setup Configure/Setup Device Diagnostics Process Variables	Time: Current		OK Carcel Anthe Help

- 2) Click on Master Reset and perform a reset to Factory Defaults.
- Open the pull-down menu Actions Scan Device to synchronize parameters (upload parameters from the device to AMS).
- 4) Configure the device via the Quick Start wizard appropriate for the application.

# Quick Start Wizards via AMS Device Manager

#### Notes:

- The layout of the dialog boxes shown may vary according to the resolution setting for your computer monitor
- The format of date fields in AMS will reflect the user's operating system configuration.
- At each step, you can accept the default values without modification and click on the next step to proceed.
- After modifying parameters click on **Apply** inside the Quick Start window to write the new values to the device.
- Click on **OK** only if you wish to update all parameters to the device and close AMS.

A Wizard provides an easy step-by-step Quick Start procedure that configures the device for a simple application. Four Quick Start Wizards are available via AMS Device Manager:

- Wizard Quick Start (Level) on page 53
- Wizard Quick Start (Volume) on page 55
- Wizard Quick Start (Volume Linearization) on page 58
- Wizard Quick Start (Flow) on page 61

A Wizard to configure pumps is also available:

• Wizard - Pump Control on page 64

11/08/2011 12:54:03.967 [SITR	ANS LUT400 Rev. 1]	
File Actions Help		
Configure/Setup Configure/Setup Identification WitzedS Coperation B Setup B Mathematice & Diagnostics	Witards	Leg TAG CONFIGURATION
Communication Security Characteristics	Wizard - Quick Start (Level)	SITRANS L
	Wizard - Quick Start (Volume) Wizard - Quick Start (Volume - Linearization)	
Configure/Setup	Weard - Pump Control	
X Device Diagnostics		
Process Variables		
	Time: Current	OK Cancel Apply Help
Device last synchronized: Device Parameters	not Synchronized.	

# Wizard - Quick Start (Level)

#### Step 1 – Identification

- 1. Navigate to Configure/Setup > Wizard > Wizard Quick Start (Level).
- You can accept the default values without modification. (TAG, Long TAG< Descriptor, Message, and Date fields can be left blank.) If desired, make changes then click on Next.

Wizard - Quick Start Step 1 of 4: Identification	_	X
Lidentification Application Ranges Summary	SIEMENS These parameters are used to identify the despitication. The far about be unique in your application. The far about be unique in your application. The parameters are used to identify the application of the far and the second	
		< Back Next > Cancel

## Step 2 – Application

- 1. Select the Siemens transducer connected to the device.
- 2. Select the Application Type (Level, Space, Distance<sup>1</sup>).
- 3. Select the Temperature Source, and if fixed, enter a Fixed Temperature value.
- 4. Click on Next.

Wizard - Quick Start Step 2 of 4: Application	×
Identification Application Ranges Summary	SIEMENS These parameters specify the application type useful to second, and its according useful to second and the accord

<sup>&</sup>lt;sup>1.</sup> For details see parameter *2.1.3.Sensor Mode* in SITRANS LUT400 (HART) Operating Instructions (7ML19985MV01).

## Step 3 – Ranges

- 1. Change units if desired (in meters by default).
- 2. Set High and Low Calibration points.
- 3. Set Response Rate.
- 4. Click on Next.

Step 3 of 4: Rang	yes		
	Identification	SIEMENS Select the settings for the ranges:	
	Application	Units	<u>+</u> 100%
0	Ranges	Low Calibration Point 60.000 m	×
+	Summary	High Calibration Point 0.000 m Response Rate	
		Slow (0.1 m/min)	
			X - Low Calibration Point Y - High Calibration Point
		•	
<			

## Step 4 – Summary

Check parameter settings, and click on **Cancel** to abort, or **Apply** to transfer values to the device.

TAG Long TAG Descriptor Message	Old:	Identification		
TAG Long TAG Descriptor Message	Old:	New:		
TAG Long TAG Descriptor Message	SITRANS LUT4	OL SITRANS LUT40		
Long TAG Descriptor Message	SITRANS LUT40	0 SITRANS LUT40		
Descriptor Message		OF STITISANS LOT 400		
Message				
Date		1/1/1899		
Language	English	English		
	Old	New:		
Transducer	XRS-5	XRS-5		
Application T	ype Level	Level		
Temperature	Sour Transducer	Transducer		
Fixed Tempe	rature 20.0	0 20.00		
		Ranges		
	Old:	New:		
Units	m	m		
	on Mg 60.00000	60.000		
Low Calibrati		0.000		
	Transducer Application T Temperature Fixed Tempe	Old Interchange (Level 2455) Application Type Level Temperature Sout Transducer Fixed Temperature Sout Transducer Fixed Temperature 200	Original         Lingent         Lingent           Application         Interview         Application         Application	Coll young         Citypes            Citypes

Configuration via the AMS Device Manager Quick Start Wizard for a Level application is now complete.

# Wizard - Quick Start (Volume)

#### Step 1 – Identification

- 1. Navigate to Configure/Setup > Wizard > Wizard Quick Start (Volume).
- You can accept the default values without modification. (TAG, Long TAG, Descriptor, Message, and Date fields can be left blank.) If desired, make changes then click on Next.

Wizard - Quick Start Step 1 of 5: Identification		×
Application Shape	SIEMENS These parameters are used to identify the device. The TAG should be unique in your application.	ETTER STRANG LIFES
Ranges	Long TAG BITRANS LUT400 Desciptor Message I	
	Date (01/07/1693 Order Number (7ML5050/02A10-1DA0 Select the language for local user interface:	
	Language English v	<back next=""> Cancel</back>

## Step 2 – Application

- 1. Select the Siemens transducer connected to the device.
- 2. Application Type defaults to Volume.<sup>1</sup>
- 3. Select the Temperature Source, and if fixed, enter a Fixed Temperature value.
- 4. Click on Next.

		SIEMENC	
	Identification	These parameters specify the application type	
0	Application	you wish to execute, and its according settings.	
Ť	Shape	Select the Application Type:	
	Ranges	Transducer XRS-5	
	Summary	Application Type Volume	
		Temperature Source	
		Fixed Temperature 20.00 denC	
_			

<sup>&</sup>lt;sup>1.</sup> For details see parameter *2.1.3.Sensor Mode* in SITRANS LUT400 (HART) Operating Instructions (7ML19985MV01).

## Step 3 – Shape

- 1. Select the vessel shape.
- 2. Click on Next.

		SIEMENS	
	Identification	Choose vessel shape:	
	Application	Vessel Shape	
0	Shape	Junoa	
- 11	Ranges		
Ļ	Summary		
- 84			
- 10			

#### Step 4– Ranges

- 1. Change units if desired (in meters by default).
- 2. Set High and Low Calibration points.
- 3. Set Response Rate, Volume Units, and Maximum Volume.
- 4. Click on Next.

		SIEMENS	A.
	Identification	Select the settings for the ranges:	
	Application	Units	× 100%
	Shape	Low Calibration Point 60.000 m	×
0	Ranges	High Calibration Point 0.000 m	
Ļ	Summary	Response Rate Slow (0.1 m/min)	
		Volume Units	X - Low Calibration Point Y - High Calibration Point
		Maximum Volume	

## Step 5– Summary

Check parameter settings, and click on **Cancel** to abort, or **Apply** to transfer values to the device.

	-	SIEMENS				
	Identification			Identification		
			1 Old:	New:		
	Application	TAG				
		Long TAG	SITRANS LUT40	DI SITRANS LUT40		
		Descriptor				
	Shape	Message				
- 64		Date		1/1/1899		
	Ranges	Language	English	English		
	Summary			Application		
i d	Summary		1014	Application		
4	Summary	Transferen	Old:	Application		
Ś	Summary	Transducer Antification Tune	Old: XRS-5	Application New: XRS-5 Volume		
Ś	Summary	Transducer Application Type Temperature Sour	Old: XRS-5 Level Transducer	Application New: XRS-5 Volume Transducer		
Ś	Summary	Transducer Application Type Temperature Sour Fixed Temperature	Old: XRS-5 Level Transducer 20.0	Application New: XRS-5 Volume Transducer 0 20.00		
	Summary	Transducer Application Type Temperature Sour Fixed Temperature	Old: XRS-5 Level Transducer 20.0	Application New: XRS-5 Volume Transducer 0 20.00		
	Summary	Transducer Application Type Temperature Sour Fixed Temperature	Old: XRS-5 Level Transducer 20.0	Application New: XRS-5 Volume Transducer 0 20.00 Vessel Shape		
	Summary	Transducer Application Type Temperature Source Fixed Temperature	Did: XRS-5 Level Transducer 20.0	Application New: XRS-5 Volume Transducer 0 20.00 Vessel Shape New:		

Configuration via AMS Device Manager Quick Start Wizard for a simple Volume application is now complete.

# Wizard - Quick Start (Volume - Linearization)

#### Step 1 – Identification

- Navigate to Configure/Setup > Wizard > Wizard Quick Start (Volume -Linearization).
- You can accept the default values without modification. (TAG, Long TAG, Descriptor, Message, and Date fields can be left blank.) If desired, make changes then click on Next.

		SIEMENS	
0	Identification	These parameters are used to identify the device. The TAG should be unique in your application.	STRANS LUFAD
	Application	TAG	
	Ranges	, Long TAG SITRANS LUT400	
÷	Summary	Descriptor	
		Date	
		0rder Number 7ML5050-0CA10-1DA0	
		Select the language for local user interface:	
		Language E paleth	

## Step 2 – Application

- 1. Select the Siemens transducer connected to the device.
- 2. The Application Type defaults to Volume.<sup>1</sup>
- 3. Select the Temperature Source, and if fixed, enter a Fixed Temperature value.
- 4. Click on Next.

Application Select the Application Type:	
Application Select the Application Type:	
Select the Application Type:	
Shape	
Ranges XRS-5	
Application Type Summary Volume	
Temperature Source	
Fixed Temperature	
20.00 degC	

<sup>1.</sup> For details see parameter *2.1.3.Sensor Mode* in SITRANS LUT400 (HART) Operating Instructions (7ML19985MV01).

## Step 3 – Shape

- 1. Select the vessel shape (Linearization Table, or Curve Table).
- 2. Click on Next.

Wizard - Quick St Step 3 of 5: Vessel S	art		[
le le	dentification	SIEMENS	
A	oplication	Choose vessel shape:	
) s	ihape	Linearization Table	
R	tanges		
- s	Summary		
			< Back Next > Cancel

#### Step 4 – Ranges

- 1. Change units if desired (in meters by default).
- 2. Set High and Low Calibration points.
- 3. Set Response Rate, Volume Units, and Maximum Volume.
- 4. Click on Next.

Identification Application Shape Ranges	SIEMENS Select the settings for the ranges: Imm v Low Calibration Point 50 000 m High Calibration Point 0.000 m	× 0%-
Saturary	Heliponie Falle Slovi (U Tanhini) ▲ Volume Units [J ▲ Maximum Volume 100 0000 I	X - Low Calibration Point Y - High Calibration Point

5. The Characteristic window appears. Enter the Level and Volume Breakpoint to build the characteristic curve.

Linearization values must be entered from lowest to highest.

Wizar	d	Quick	Start										×
Linea	riza	tion											and the
	- 1-												, î l
	Ð					Cha	racteristi	ic			_	_	
		100										_	
		90 -											
		80 -										_	
		70 -										_	THE OFFICE
		60 -										_	
	olume	60 -										_	
	>	40 -										_	
		30 -										_	
		20 -											
		10 -											
		0	6	12	18	2ª	30 Level	36	42	AÐ	så	00	
[			Level	Vol	ume				Level	Volur	ne		
	_		2	0.000	0.000000		_	1	17	0.000	0.000000		
			3	0.000	0.000000			1	19	0.000	0.000000	_	*
									_	< Back	Next >	Cance	ł

#### 6. Click on Next.

#### Step 5 – Summary

Check parameter settings, and click on  $\ensuremath{\textbf{Cancel}}$  to abort, or  $\ensuremath{\textbf{Apply}}$  to transfer values to the device.

		SIEMENS			
	Identification			Identification	
			0 ld:	New:	
	Application	TAG			
	-	Long TAG	SITRANS LUT4	0 SITRANS LUT40	
		Descriptor			
	Shape	Message			
		Date		1/1/1899	
- 100	Ranges	Language	English	English	
			Old	New:	
- 62		Transducer	VRS.5	VBS.5	
		Application Type	Level	Volume	
		Temperature Sour	Transducer	Transducer	
		Fixed Temperature	20.0	0 20.00	
		'		Vessel Shape	
			1 Old:	New	 
		Manual Change	None	Linearization Table	
		Vesse one			

Configuration via AMS Device Manager Quick Start Wizard for a Volume application with a complex vessel shape is now complete.

# Wizard - Quick Start (Flow)

#### Step 1 – Identification

- 1) Navigate to Configure/Setup > Wizard > Wizard Quick Start (Flow).
- You can accept the default values without modification. (TAG, Long TAG, Descriptor, Message, and Date fields can be left blank.) If desired, make changes then click on Next.

tep 1 of 5: Ident	tification		
		SIEMENS	
0	Identification	These parameters are used to identify the device. The TAG should be unique in your annication.	
	Application		
	Shape	TAG	
- 10	Ranges	Long TAG SITRANS LUT400	
. ↓	Summary	Descriptor	3 4 9 9
		Message	÷
		Date 01/01/1899	
		Order Number	
		Select the language for local user interface:	
		English 💌	
			< Back Next > Cance

## Step 2 – Application

- 1. Select the Siemens transducer connected to the device.
- 2. The Application Type defaults to Flow.<sup>1</sup>
- 3. Select the Temperature Source, and if fixed, enter a Fixed Temperature value.
- 4. Click on Next.

	SIEMENS
Identification	These parameters specify the application type you wish to execute, and its according settings.
Application	- Salart the endiration Ture:
Shape	Series on Hyperodoler ( yyer
Ranges	XRS-5
Summary	Application Type Flow -
	Temperature Source Transducer
	Fixed Temperature 20.00 denC
	•
	Identification Application Shape Ranges Summary

For details see parameter 2.1.3.Sensor Mode in SITRANS LUT400 (HART) Operating Instructions (7ML19985MV01).

## Step 3 – Shape

- Select the Primary Measuring Device (PMD). If selection is any value except Off, click into the field below, to update the screen with the various PMD dimensions requiring entry. For example, if PMD selected is **Palmer Bowlus Flume**, a value must be entered for **Maximum Flume Width**, hmax.
- 2. Enter all required values.
- 3. Click on Next.

Wizard - Quick Step 3 of 5: Shap	Start	_	_	×
	Identification	SIEMENS Select the Flume or Weir shape.		
	Application	Primary Measuring Device	Unitsm	
9	Shape	Method of Flow Calculation	OCM Dimension 1 0.000 m	11
	Ranges	V-Notch Angle 25.000	0CM Dimension 2 0.000 m	
+	Summary	Flow Exponent	OCM Dimension 3	
		K Factor	OCM Dimension 4	
		Roughness Coefficient 0.000	,	
		Slope 0.000		
		1		×
			< Back Next >	Cancel

## Step 4 – Ranges

- 1. Change units if desired (in meters by default).
- 2. Set High and Low Calibration points.
- 3. Set Response Rate, Volume Units, and Maximum Volume.
- 4. Select a Method of Flow Calculation, and set Maximum Head, Flowrate Units, Maximum Flow, Flowrate Decimal, and Low Flow Cutoff.
- 5. Click on Next.

		SIEMENS	Configure the flow parameters.	
	Identification	Select the settings for the ranges:	Maximum Head	
	Application	Units	Flowrate Units	
	Shape	Low Calibration Point	Flowrate Decimal	
0	Ranges	High Calibration Point	Low Flow Cutoff	
↓ I	Summary	Response Rate	Maximum Flow at 20mA	
		[Stow (c. 1 mentar)	- ,	

6. If PMD selected is Universal Head Flow, the Characteristic curve appears.

#### 7. Set the Head and Flow Breakpoints.

	6	Chara	cteristic	_			
0.000000							
8999999.1 -							_
7999999.2 -							_
6999999.3 -							
5999999.4-							_
<u>8</u> 4999999.5 -							_
3999999.6 -							_
200000.7 -							_
1999999.8 -							_
9999999.9 -							_
0.0		 -1	-0	-	-	 -	
		 24	Head	30		 0	00

#### 8. Click on Next.

## Step 5 – Summary

Check parameter settings, and click on **Cancel** to abort, or **Apply** to transfer values to the device.

top 5 61 5. 56	mmary					
_						
		SIEMENS				
	Identification			Identification		
	Concession of the local division of the loca		1014	Inclusion		
	Application	TAC	Uld:	New:		
	Application	Long TAG	SITE AND LUT 40	SITRANS LUT 40		
		Descriptor	STITIANS LOTIO	STITIANS LOTIO		
	Shape	Message				
	the second second	Date		1/1/1899		
	-	Language	English	English		
	Summary		Old:	Application New:		
		Transducer	XRS-5	XRS-5		
		Application Type	Level	Flow		
		Temperature Sour	Transducer	Transducer		
		Fixed Temperature	20.00	20.00		
			Prima	ry Measuring I	Device	
			Prima Old:	ry Measuring I	Device	
		Primary Measuring	Prima Old:	ny Measuring I New: Off	Device	
		Primary Measuring Method of Flow C	Prima Old: Off Absolute	New: Off Ratiometric	Device	1
1		Primary Measuring Method of Flow C V-Notch Angle	Prima Old: Olf Absolute 25.000	New: Off Ratiometric 25.000	Device	-
1		Primary Measuring Method of Flow C. V-Notch Angle Flow Exponent	Prima Old: Off Absolute 25.000 1.550	ry Measuring I New: Off Ratiometric 25.000 1.550	Device	in the second

Configuration via AMS Device Manager Quick Start Wizard for a Flow application is now complete.

# Wizard - Pump Control

# Step 1 – Application

- 1) Navigate to **Configure/Setup > Wizard > Wizard Pump Control**.
- 2) Enable pump control, then assign a relay to each pump.
- 3) Click on Next.

izard - Pump Step 1 of 4: App	Control				-
٢	Application Vessel Regime	SIEMENS Application Pump Control Enable Disabled	V		
ļ	Pump Setpoints Summary	Relay Pump 1 Relay 2 Relay Pump 2 Relay 3	v v		
J					

## Step 2 – Vessel Regime

- 1) Select the pump control mode.
- 2) Set the service ratio for each pump.
- 3) Click on Next.

Wizard - Pump Control Step 2 of 4: Vessel Regime	×
Application Vessel Regime Pump Seborits	SIEMENS Vessel Regime Pung Control Mode [Alternato Dudy Assist Sancia Bako Pung 1
Summary	Service Rato Punp 2
	< Back Next > Cancel

## Step 3 – Pump Setpoints

- 1. Set the ON and OFF setpoints for each pump.
- 2. Click on Next.

Wizard - Pump C Step 3 of 4: Pump S	etpoints	_	_	_	_	_	×
	Application	SIE Pump Se	MENS				
	/essel Regime	ON Set	point Pump 1 0.000 m				
	Summary	ON Set	0.000 n point Pump 2 0.000 n				
		OFF Se	tpoint Pump 2 0.000 n				
					< Back	Next >	Cancel

#### Step 4 – Summary

Check parameter settings, and click on **Cancel** to abort, or **Apply** to transfer values to the device.

		SIEMENS				
	Application			Application		
			Old	New:		 
	Vessel Regime	Pump Control En	a Disabled	Disabled		
		Relay Pump 1	Relay 2	Relay 2		
	and the second se	Relay Pump 2	Relay 3	Relay 3		
		Service Ratio Pu	n	Pump Setpoint	8	
			L0M	New	-	 _
		ON Setpoint Pure	v 0.00	0 000		
_		OFF Setpoint Put	rl 0.00	0.000		
		ON Setpoint Pur	x 0.00	0.000		
		OFF Setpoint Pur	r 0.00	0 0.000		

Pump configuration via AMS Device Manager Pump Control Wizard is now complete.

# Changing parameter settings using AMS Device Manager

Note: For a complete list of parameters, see AMS Menu Structure on page 76.

- 1) Adjust parameter values in the parameter value field in Configure/Setup view, then click on **Apply** to write the new values to the device. The parameter field will display in yellow until the value has been written to the device.
- 2) Click on **OK** only if you wish to update all parameters and exit AMS.

# **Configure/Setup View**

# Operation

11/08/2011 12:54:03.967 [SITR File Actions Help	ANS LUT400 Rev. 1]			
<u>sa k</u>				
Configure/Setup Configure/Setu	Select Analog Output SIEMENS Current Output Function Level	Long TAG STRANS LUT400 	Select Analog Output	GOOD
Configure/Setup Configure/Setup Process Variables	Time: Current		OK Cancel 6	spply Hep

Navigate to Configure/Setup > Operation for access to:

## Select Analog Output:

Select analog output and current output function

#### Auto Zero Head

View current head measurement, set actual head value and set zero head offset

#### Auto Sensor Offset

 View current distance measurement, set desired distance for auto sensor offset, and set sensor offset

## **Auto Sound Velocity**

 View current distance measurement, set desired distance for auto sound velocity, and set sound velocity at 20 degrees Celsius.

## **Real Time Clock**

• Set current date and time

#### Tests

Perform loop-test

#### Reset

Perform a master reset, reset of configuration flag (for HART communications), min/max temperatures, and totalizers

# Setup

11/08/2011 12:54:03.967 [SITR	ANS LUT400 Rev. 1]	- D X
File Actions Help		
<u>sq</u> %		
Configure/Setup	Sensor	
Configure(Setup 2 	SIEMENS Long TAG GOOD Units STRANS LUT 400 STRANS LUT 400 Long TAG Strans And Stra	
Discrete Trouts     Data Loging     Other Control     Single Processing     Date and Time     Plow     Plow     Local Doplay     Local Doplay     Datesens     Single Processing     Datesens     D	j>R5.5 Fingumcy Long Shot Dutation Shot Shot Dutation 2007 µs	
Configure/Setup  Device Diagnostics  Process Variables		
	Time: Current v OK Cancel Apply	Help

Navigate to Configure/Setup > Setup for access to:

#### Sensor

 Set primary and secondary sensor mode, units, transducer, frequency and shot durations

#### Calibration

· Set high and low calibration points, sensor offset, near and far ranges

#### Fail-Safe

• Set fail-safe value, material level, and LOE timer

#### **Current Output**

• Set current output function, and mA limits and scale values

#### Volume

Allow volume calculation through setup of units, vessel shape and dimensions

#### Pumps

11/08/2011 12:54:03.967 [SITR/	NS LUT400 Rev. 1]	_		
File Actions Help				
8 d K				
Configure/Stup  Configure/Stup  Configure/Stup  Correc Output  Control of the Control  Control of the Control  Control of the Control  Configure/Stup  Configu	Basic Setup SIEMENS Pung Control Enable [Dirabled Relay Pung 1 Relay 2 Relay Pung 2 [Relay 2 Pung Control Mode [Alternate Urup 4 Assist ON Selpoint Pung 1 OFF Selpoint Pung 2 OFF Selpoint Pung 2 OFF Selpoint Pung 2 OFF Selpoint Pung 2 Service Ratio Pung 1	Long TAG SITFANS LUT 400 		6000
Process Variables	Service Ratio Pump 2	1		
Device last synchronized: Device Parameters n	Time: Current		OK Cancel	Apply Help

Navigate to Configure/Setup > Setup > Pumps for access to:

#### **Basic Setup**

• Enable pump control, assign pump relays, pump control mode and setpoints

#### **Modifiers**

 Enable and configure wall cling reduction, pump run-on, pump start delays, and energy savings

#### **Totalizers**

• Configure pumped volume totalizers

#### Alarms

B. M?		
onfigure/Setup	Level	
A Configure/Seturn		
Identification	Long TAG	6000
Wizards	SIEMENS SITRANS LUT400	0000
Operation		
<ul> <li>Setup</li> </ul>	High Level Alarm	
Sensor	Enable Enable	
Calibration	Disabled   Disabled	•
Rate	High Land Maker De	
Fail-Safe	0.000 m	0.000 m
Current Output	1 0.000 m 1	0.000 m
Volume	High Level Value Off Low Level Value Off	
Pumps	0.000 m	0.000 m
<ul> <li>Alarms</li> </ul>	A deviation of the second se	
Level	Assigned Helay Assigned Helay	
Alarms	INO heady	
Piowrate	Alarm State Alarm State	
Discrece inputs	Inactive Inactive	v
Other Control		
E Signal Processing	In-bounds Level Alarm	Alarm
Date and Time	Enable	
Flow	Disabled	
Configure/Setup	High Level Value High Level Value	
	0.000 m	0.000 m
Contraction Contraction Contraction	Low Level Value Low Level Value	
	0.000 m	0.000 m
Process Variables		
	Assigned Relay Assigned Relay	
	No Helay No Helay	•

Navigate to Configure/Setup > Setup > Alarms for access to:
# Level

Enable and configure level alarms

# Alarms

 Enable and configure non-level alarms, such as temperature, switch (DI), fail-safe, and time to spill

# Flowrate

• Enable and configure flowrate alarms

Navigate to Configure/Setup > Setup for access to:

# **Discrete Inputs**

Enable and configure backup level override, DI logic, and pump interlock

# Data Logging

· Configure data logging for PVs, alarms, and flow

# Other Control

• Set other controls, such as elapsed time and time of day relays, external totalizers and samplers

# Signal Processing

11/08/2011 12:54:03.967 [SITRAN	IS LUT400 Rev. 1]			. DX
B B K?				
Configure/Setup	Temperature and Velocity			1
Volame     Volame     Pumps     Alarms     Discrete Innuits	SIEMENS	Long TAG SITRANS LUT400		GOOD
Data Logging Other Control	Sound Velocity	347.06 m/s		
Signal Processing     weight fremperature and Vel     Echo Select	Process Temperature	25.03 degC		
Echo Profile TVT Setup	Temperature Source Transducer	-		
Date and Time     Flow	Fixed Temperature	20.00 degC		
Totalizers     Local Display     Maintenance & Diagnostics	Sound Velocity at 20 degrees C	344.13 m/s		
Communication Security				
<				
Onfigure/Setup				
Device Diagnostics     Process Variables				
3				
	Time: Current	•	OK Cancel	Apply Help
Device last synchronized: Device Parameters not	Synchronized.			11.

Navigate to Configure/Setup > Setup > Signal Processing for access to:

# **Temperature and Velocity**

Configure echo processing by selecting temperature and velocity

# Echo Select

 Configure echo processing by selecting algorithm, thresholds, filters, and submergence detection

# Echo Profile

- Measure to display current echo profile, using standard or detailed profile resolution, as well as view previous profiles
- To view a previous profile, click the drop-down arrow on the Time field and select the desired profile (note: available only using AMS version 10.1).

# **TVT Setup**

• Enable shaper mode, hover level, and auto false echo suppression

# TVT Shaper

• Set TVT breakpoints and view the effects of the TVT shaper modifications

Navigate to Configure/Setup > Setup for access to:

# Date and Time

# **Daylight Saving**

• Enable and configure daylight saving

### Flow

 Configure flow by setting primary measuring device (PMD) and its dimensions, method and values for flow calculations, including head and flow breakpoints

## Totalizers

Configure OCM flow totalizers and pumped volume totalizers

# Local Display

• Select Language to display on LCD

# **Maintenance & Diagnostics**

11/08/2011 12:54:03.967 [SITRA	S LUT400 Rev. 1]		
File Actions Help			
8 D K			
Configure/Setup	Set Pumps Runtimes		1
Volume	SIEMENS SITRANS L	.UT400	GOOD
Discrete Inputs Data Logging Other Central	This method allows the setting of the pumps runtimes.		
Signal Processing     Date and Time     Elow	Run Time Relay 2 0 Hours Burn Time Relay 3		
Totalizers Local Display	0 Hours		
Maintenance & Diagnostics     Diagnostics     diagnostics	Relay Pump 1 Relay 2 Data: Data 2	×	
Wear Echo Quality	Relay 3	<u>v</u>	
Communication Security	Set Pumps Runtimes		
Characteristics			
Configure/Setup			
Process Variables			
<u>B</u>			
Device last synchronized: Device Parameters no	Sunchronized.	UK Cancel A	ppy <u>H</u> elp

Navigate to Configure/Setup > Maintenance & Diagnostics for access to:

# Diagnostics

## Pump Records

Set runtimes for relays assigned to a pump

#### Wear

View power-on time, power-on resets, and process temperatures

#### **Echo Quality**

View values related to echo quality

#### Maintenance

#### **Transducer Enable**

• Enable/disable the transducer

#### **Remaining Device Lifetime**

- View and configure maintenance settings for the device
  - a) Open the window **Remaining Device Lifetime**.
  - b) After modifying values/units as required, click on **Apply** to accept the change.
  - c) Click on **Snooze for 1 Year** to add a year to the Total Expected Sensor Life.

11/08/2011 12:54:03.967 [SITRAN	IS LUT400 Rev. 1]				
File Actions Help					
5 B. K?					
Configure/Setup	Remaining Device Lifetime				
Configure/Sctup Dorse lopus Dorse lopus D	Remaining Device Lifetime SIEMENS Time Lifetime [Expected] If the in Operation Remaining Lifetime Activation of Remainders Om Remaining Lifetime Device Lifetime (De Remainder 2 before Lifetime (De Stroot	Long TAG BITPANS U 0.023 Years 9.377 Years 0.164 Years manded 0.015 Years 2015 Years 2015 Years	UT400 ×	-	6000
Process Variables					
<u></u>					6
	Time: Current	-		OK Cancel	Apply Help
evice last synchronized: Device Parameters not	Synchronized.				

# **Remaining Sensor Lifetime**

- View and configure maintenance settings for the sensor
  - a) Open the window **Remaining Sensor Lifetime**.
  - b) After modifying values/units as required, click on **Apply** to accept the change.
  - c) Click on Sensor Replaced to reset Remaining Lifetime to 0 hours.

 Click on Snooze for 1 Year to add a year to the Total Expected Sensor Life.

11/08/2011 12:54:03.967 [SITRA	INS LUT400 Rev. 1]	
File Actions Help		
@ B. M?		
Configure/Setup	Remaining Sensor Lifetime	
Alarms     Discrete Inputs     Discrete Control     Signal Processing	SIEMENS Long TAG GOOD SIEMENS SITTANS LUT 400 Time Units	
	Lidens Expected 10.000 Years Time in Operation	
Diagnostics     Maintenance     Transducer Enable     Remaining Device Life     the Remaining Sensor Life	OUT Years      Renaring Lifetime      S953 Years      Arthodom of Remarkers	
Calibration Schedule Calibration Schedule Communication Security	01 v Pennindr 1 boloe Lifeline Required 0.164 Yean	
Configure/Setup	Reminde 2 before Litetime (Demonded) 0019 Years Sensor Replaced	
Device Diagnostics	Snocce for 1 year	
8	Tme: Current V OK Carool Acob	Help
Device last synchronized: Device Parameters no	ot Synchronized.	

# Service Schedule

• View and configure service schedules

## **Calibration Schedule**

• View and configure calibration schedules

# Communication

Navigate to **Configure/Setup > Communication** to read product information (such as Manufacturer and device IDs, device and EDD revisions), and to configure HART communication.

# Security

Navigate to **Configure/Setup > Security** to enable/disable write protection.

**Note:** Write Protection is global and can be set via remote software (such as AMS Device Manager), or at the device.

# Characteristics

Navigate to Configure/Setup > Characteristics to view device certificates and approvals.

# **Device Diagnostics View**

Click on the Device Diagnostics bar at the bottom of the navigation window, for access to:

#### (Device) Status

11/08/2011 12:54:03.967 [SITR/	NNS LUT400 Rev. 1]	_		
<u>s d</u>				
Device Diagnostics     Device Laprotics     Martenance     Edo Profile	Status SIEMENS Device Status Primay variable outride the Non-primay variable outride the Current output outride the out Current output in fired mode Current outp	Long TAG BITBANS LUT400 operating limits a the operating sampe limits operating sampe limits		6000
Configure/Setup	<ul> <li>Configuration changed</li> <li>Field device malfunctioned</li> </ul>			
Process Variables			OK Cano	el Apply Help
Device last synchronized: Device Parameters ne	ot Synchronized.			14

## Hardware/Firmware Status

11/08/2011 12:54:03.967 [SI]	RANS LUT400 Rev. 1]		
<b>8</b> ]]. <b>№</b> ]			
Device Diagnostics	HW/FW-Status		
Device Diagnostics     Status     HW/FW-Status	SIEMENS	Long TAG STTRANS LUT400	GOOD
Echo Profile	Status group 0	Status group 4	
	Loss of Echo	Transducer Temperature Sensor	
	Cable Fault	Status group 5	
	Device Lifetime Reminder 1	Transducer Temperature High	
	Device Lifetime Reminder 2	Transducer Temperature Low	
	Sensor Lifetime Reminder 1	TS-3 Failure	
	Sensor Lifetime Reminder 2	Poor Signal	
	Status group 1	Status group 23	
G Configure/Setup	Service Schedule Reminder 1	Flow Configuration Error	
Device Diagnostics	Service Schedule Reminder 2	Flow Calculations Error	
Process Variables	C LTB Scale	Flow Log Restore Error	Y
		OK Cancel Apply	Help
Device last synchronized: Device Parameter	s not Synchronized		

Maintenance warnings and alarms can also be viewed and acknowledged from this view, as well as having access to the Echo Profile.

# **Process Variables View**

rocess Variables	Overview			
Process Variables     Overview     Temperature	SIEMENS	Lon [SIT	g TAG RANS LUT400	GOOD
Totalizers Trend View Discrete Inputs and Relays		Measured V ■Level ■Space	alue	Analog Out(PV) =
	n) (m)(sU) 00 _ 01 (0000000	Distance	(m)(l) (m) 69-100-60	Level Measurement 59.439 m
	8999999.1-64 - 64		- 5+ 90 - 54	
	7999999.2 -83 - 48	-	- 49- 80 - 48	The above value will not correspond to mA
	6999999.3 - 42 6999999.4 - 42		42-70 - 42	
	4999999.5 -0 - 30		- 30 - 50 - 30	99.066 %
	3999999.6 -24 - 24		- 2+ 40 - 24	Loop Current
	2999909.7 -18 - 18		- 19- 30 - 18	,
	1999999.8 -12 - 12	2	- 12- 20 - 12	
Configure/Setup	999999.9-6-6	0.56	0.56	
🖞 Device Diagnostics	0.0-0- 0	Level Space	Distance	
Process Variables				
3				

Click on Process Variables at the bottom of the navigation window for access to:

- Measurement values (level, space, distance)
- Temperature values
- Totalizer values
- Trend View
- Discrete Inputs and Relays

# **Password Protection**

An AMS Device Manager administrator can configure the user to require a password. The use of passwords is recommended. A password should be assigned to the 'admin' username immediately after installing AMS Device Manager.

Each user is given an AMS Device Manager username and password and required to enter them when they start AMS Device Manager. Access to functions depends on the level of permissions granted.

#### Login types

standard, local, or domain

A standard user can change their password in AMS Device Manager. A Local or Domain Windows user cannot change their password using AMS Device Manager and must request their network administrator to do so.

# **User Manager Utility**

Usernames, passwords, and permissions are assigned to users by an AMS Device Manager administrator, using the User Manager utility on the Server Plus Station. Only a user with AMS Device Manager System Administration rights can log in to User Manager.

#### To configure a new user/edit existing user:

- 1) From the Windows taskbar select: Start > AMS Device Manager > User Manager.
- 2) Select the user type, standard (AMS Device Manager), local or domain user, and login.

From the User Manager window you are able to:

- add users
- edit existing users



# **AMS Menu Structure**

• **Note:** Where a parameter number is listed, more information is available for that parameter in *Parameter reference (LUI)* in the SITRANS LUT400 (HART) Operating Instructions (7ML19985MV01).

Config	ure/Setup I	parameter number		
	DENTIFIC	ATION		
	Iden	tification		
		Identifi	ication (tab)	
			TAG	3.1.1
			Long TAG	3.1.2
			Descriptor	3.1.3
			Message	3.1.4
			Date	3.1.5
			Manufacturer	
			Product Name	
			Product	3.1.6
			Order Number	3.1.7
			Serial Number	
			Final Assembly Number	3.1.9
			Hardware Revision	3.1.10
			Firmware Revision	3.1.11
			Loader Revision	3.1.12
			EDD Version	
			Date of Manufacturing	3.1.13
			Order Option	3.1.14
	Wiza	ards	·	
		Wizard	ls (tab)	
			Long tag	3.1.2
		Wizard	- Quick Start (Level)	
			Step 1 of 4: Identification (tab)	
			TAG	3.1.1
			Long tag	3.1.2
			Descriptor	3.1.3
			Message	3.1.4
			Date	3.1.5
			Order Number	3.1.7
			Language	6
			Step 2 of 4: Application (tab)	
			Transducer	2.1.6
			Application Type	
			Temperature Source	2.12.1.3
			Fixed Temperature	2.12.1.4

Cor	Configure/Setup Function Group (cont'd)			Group (cont'd)	parameter number	
					Step 3 of 4: Ranges (tab)	
					Units	2.1.1
					Low Calibration Point	2.2.1
					High Calibration Point	2.2.2
				1	Response Rate	1
				1	Step 4 of 4: Summary (tab)	1
					TAG	
					Long TAG	
					Descriptor	
					Message	
					Date	
					Language	
					Transducer	-
					Application Type	
					Temperature Source	-
					Fixed Temperature	-
					Units	
					Low Calibration Point	
					High Calibration Point	
					Response Rate	
					Sensor Mode	
					Current Output Function	
					Start of Scale (= 4 mA)	
					Full Scale (= 20 mA)	
				Wizard -	Quick Start (Volume)	
					Step 1 of 5: Identification (tab)	
					TAG	3.1.1
					Long TAG	3.1.2
					Descriptor	3.1.3
					Message	3.1.4
					Date	3.1.5
					Order Number	3.1.7
					Language	6
					Step 2 of 5: Application (tab)	
					Transducer	2.1.6
					Application Type	
					Temperature Source	2.12.1.3
					Fixed Temperature	2.12.1.4
					Step 3 of 5: Vessel Shape (tab)	
					Vessel Shape	2.6.1
					Step 4 of 5: Ranges (tab)	
					Units	2.1.1

Con	parameter number		
		Low Calibration Point	2.2.1
		High Calibration Point	2.2.2
		Response Rate	
		Volume Units	2.6.2
		Maximum Volume	2.6.3
		Step 5 of 5: Summary (tab)	
		TAG	
		LongTAG	
		Descriptor	
		Message	
		Date	
		Language	
		Transducer	
		Application Type	
		Temperature Source	
		Fixed Temperature	
		Vessel Shape	
		Units	
		Low Calibration Point	
		High Calibration Point	
		Response Rate	
		Volume Units	
		Maximum Volume	
		Sensor Mode	
		Current Output Function	
		Start of Scale (= 4 mA)	
		Full Scale (= 20 mA)	
	Wizard ·	- Quick Start (Volume - Linearization)	
		Step 1 of 5: Identification (tab)	
		TAG	3.1.1
		Long TAG	3.1.2
		Descriptor	3.1.3
		Message	3.1.4
		Date	3.1.5
		Order Number	3.1.7
		Language	6
		Step 2 of 5: Application (tab)	
		Transducer	2.1.6
		Application Type	
		Temperature Source	2.12.1.3
		Fixed Temperature	2.12.1.4
		Step 3 of 5: Shape (tab)	

Cor	figu	parameter number		
			Vessel Shape	2.6.1
			Step 4 of 5: Ranges (tab)	
			Units	2.1.1
			Low Calibration Point	2.2.1
			High Calibration Point	2.2.2
			Response Rate	
			Volume Units	2.6.2
			Maximum Volume	2.6.3
			Step 4 of 5: Linearization (tab)	
			Linearization	2.6.7
			Step 5 of 5: Summary (tab)	
			TAG	
			Long TAG	
			Descriptor	
			Message	
			Date	
			Language	
			Transducer	
			Application Type	
			Temperature Source	
			Fixed Temperature	
			Vessel Shape	
			Units	
			Low Calibration Point	
			High Calibration Point	
			Response Rate	
			Volume Units	
			Maximum Volume	
			Sensor Mode	
			Current Output Function	
			Start of Scale (= 4 mA)	
			Full Scale (= 20 mA)	
		Wizard	- Quick Start (Flow)	
			Step 1 of 5: Identification (tab)	
			TAG	3.1.1
			Long TAG	3.1.2
			Descriptor	3.1.3
			Message	3.1.4
			Date	3.1.5
			Order Number	3.1.7
			Language	6
			Step 2 of 5: Application (tab)	

Configure/Setup Fu	parameter number	
	Transducer	2.1.6
	Application Type	
	Temperature Source	2.12.1.3
	Fixed Temperature	2.12.1.4
	Step 3 of 5: Shape (tab)	
	Primary Measuring Device	2.15.1
	Method of Flow Calculation	2.15.3.1
	V-Notch Angle	2.15.4.2
	Flow Exponent	2.15.3.2
	K Factor	2.15.4.1
	Roughness Coefficient	2.15.4.4
	Slope	2.15.4.3
	Units	2.1.1
	OCM Dimension 1	2.15.4.5
	OCM Dimension 2	2.15.4.6
	OCM Dimension 3	2.15.4.7
	OCM Dimension 4	2.15.4.8
	Step 4 of 5: Ranges (tab)	
	Units	2.1.1
	Low Calibration Point	2.2.1
	High Calibration Point	2.2.2
	Response Rate	
	Maximum Head	2.15.3.3
	Flowrate Units	2.15.3.7
	Flowrate Decimal	2.15.3.6
	Low Flow Cutoff	2.15.3.9
	Maximum Flow at 20 mA	2.15.3.4
	Step 5 of 5: Summary (tab)	
	TAG	
	Long TAG	
	Descriptor	
	Message	
	Date	
	Language	
	Transducer	
	Application Type	
	Temperature Source	
	Fixed Temperature	
	Primary Measuring Device	
	Method of Flow Calculation	
	V-Notch	
	Flow Exponent	

Configure/Setup Function Group (cont'd)						parameter	
					K Factor	number	
					Boughness Coefficient		
					Slopo		
					OCM Dimension 1		
					OCM Dimension 2		
					Units		
					Low Calibration Point		
					Nevinue llas d		
					IVIAXIMUM Head		
					Flowrate Decimal		
					Maximum Flow at 20 mA		
					Sensor Mode		
					Current Output Function		
					Start of Scale (= 4 mA)		
					Full Scale (= 20 mA)		
				Wizard -	Pump Control		
					Step 1 of 4: Application (tab)		
					Pump Control Enable	2.7.1.1	
					Relay Pump 1	2.7.1.2	
					Relay Pump 2	2.7.1.3	
					Step 2 of 4: Vessel Regime (tab)		
					Pump Control Mode		
					Service Ratio Pump 1	2.7.1.10	
					Service Ratio Pump 2	2.7.1.11	
					Step 3 of 4: Pump Setpoints (tab)		
					ON Setpoint Pump 1	2.7.1.6	
					OFF Setpoint Pump 1	2.7.1.7	
					ON Setpoint Pump 2	2.7.1.8	
					OFF Setpoint Pump 2	2.7.1.9	
					Step 4 of 4: Summary (tab)		
					Pump Control Enable		
					Relay Pump 1		
					Relay Pump 2		
					Pump Control Mode		
					Service Ratio Pump 1		
					Service Ratio Pump 2		
					ON Setpoint Pump 1		

Con	figur	e/Se	parameter number					
					OFF Setpoint Pump 1			
					ON Setpoint Pump 2			
					OFF Setpoint Pump 2			
		OPEF	RATION					
			Operat	tion				
				Select A	Select Analog Ouput (tab)			
					Long TAG			
					Current Output Function			
					Select Analog Output			
				Auto Ze	ro Head (tab)			
					Long TAG	3.1.2		
					Zero Head Offset	2.15.3.5		
					Head Measurement	2.12.5.5		
					Set Zero Head Offset			
				Auto Se	nsor Offset (tab)			
					Long TAG	3.1.2		
					Sensor Offset	2.2.3		
					Distance Measurement	2.12.5.3		
					Set Sensor Offset			
				Auto So	und Velocity (tab)			
					Long TAG	3.1.2		
					Sound Velocity at 20 degrees C	2.12.1.5		
					Distance Measurement	2.12.5.3		
					Set Sound Velocity			
				Real Tin	ne Clock (tab)			
					Long TAG	3.1.2		
					Current Date	2.14.1		
					Current Time	2.14.2		
					Set Real Time Clock			
				Tests (ta	ab)			
					Long TAG	3.1.2		
					Loop-Test	2.5.1		
				Reset (t	ab)			
					Long TAG	3.1.2		
					Master Reset	3.2.3		
					Configuration Flag Reset			
					Reset Min/Max Temperatures			
					(OCM) Reset Daily Totalizers	2.16.5		
					(OCM) Reset Running Totalizer	2.16.6		
					(Pumped Volume) Reset Running Totalizer	2.7.3.5		
		Setu	IP					
			Senso	r				

Configure/Setup	parameter number	
	Sensor (tab)	
	Long TAG	3.1.2
	Units	2.1.1
	Sensor Mode	
	Sensor Mode Secondary	
	Transducer	2.1.6
	Frequency	2.1.7
	Long Shot Duration	2.1.8
	Short Shot Duration	2.1.9
	Calibration (tab)	
	Long TAG	3.1.2
	Low Calibration Point	2.2.1
	High Calibration Point	2.2.2
	Sensor Offset	2.2.3
	Near Range	2.2.4
	Far Range	2.2.5
	Rate (tab)	
	Long TAG	3.1.2
	Fill Rate per Minute	2.3.1
	Empty Rate per Minute	2.3.2
	Damping Filter	2.3.3
	Fail-Safe (tab)	
	Long TAG	3.1.2
	Material Level	2.4.1
	LOE Timer	2.4.2
	Fail-Safe mA Value	2.4.3
	Current Output (tab)	
	Long TAG	3.1.2
	Current Output Function	
	Start of Scale (=4 mA)	
	Full Scale (=20 mA)	2.5.4
	Minimum mA Limit	2.5.5
	Maximum mA Limit	2.5.6
	Volume (tab)	
	Long TAG	3.1.2
	Vessel Shape	2.6.1
	Volume Units	2.6.2
	Maximum Volume	2.6.3
	Vessel Dimension A	2.6.4
	Vessel Dimension I	2.6.5
	User Defined Unit	2.6.6
	Linearization	2.010
	Current Output Function         Start of Scale (=4 mA)         Full Scale (=20 mA)         Minimum mA Limit         Maximum mA Limit         Volume (tab)         Long TAG         Volume Units         Maximum Volume         Vessel Dimension A         Vessel Dimension L         User Defined Unit         Linearization	2.5.4 2.5.5 2.5.6 3.1.2 2.6.1 2.6.2 2.6.3 2.6.4 2.6.5 2.6.6

Configure	configure/Setup Function Group (cont'd)					
	Pumps					
	Basic S	Setup				
		Basic Setup (tab)				
		Long TAG	3.1.2			
		Pump Control Enable	2.7.1.1			
		Relay Pump 1	2.7.1.2			
		Relay Pump 2	2.7.1.3			
		Pump Control Mode				
		ON Setpoint Pump 1	2.7.1.6			
		OFF Setpoint Pump 1	2.7.1.7			
		ON Setpoint Pump 2	2.7.1.8			
		OFF Setpoint Pump 2	2.7.1.9			
		Service Ratio Pump 1	2.7.1.10			
		Service Ratio Pump 2	2.7.1.11			
	Modifi	ers				
		Modifiers (tab)				
		Long TAG	3.1.2			
		(Wall Cling Reduction) Enable	2.7.2.1.1			
		Level Setpoint Variation	2.7.2.1.2			
		(Pump Run-On) Enable	2.7.2.3.1			
		Run-On Interval	2.7.2.3.2			
		Run-On Duration Pump 1	2.7.2.3.3			
		Run-On Duration Pump 2	2.7.2.3.4			
		Delay Between Starts	2.7.2.4.1			
		Power Resumption Delay	2.7.2.4.2			
		(Energy Savings) Enable	2.7.2.2.1			
		Peak Lead Time	2.7.2.2.2			
		Peak 1 Start Time	2.7.2.2.3			
		Peak 1 End Time	2.7.2.2.4			
		Peak 2 Start Time	2.7.2.2.5			
		Peak 2 End Time	2.7.2.2.6			
		Peak 3 Start Time	2.7.2.2.7			
		Peak 3 End Time	2.7.2.2.8			
		Peak 4 Start Time	2.7.2.2.9			
		Peak 4 End Time	2.7.2.2.10			
		Peak 5 Start Time	2.7.2.2.11			
		Peak 5 End Time	2.7.2.2.12			
		Peak ON Setpoint Pump 1	2.7.2.2.13			
		Peak OFF Setpoint Pump 1	2.7.2.2.14			
		Peak ON Setpoint Pump 2	2.7.2.2.15			
		Peak OFF Setpoint Pump 2	2.7.2.2.16			
	Totalize	ers				

Configure/Setup Function Group (cont'd)						parameter number
				Totalizers	(tab)	
					Long TAG	3.1.2
					Running Totalizer	2.7.3.1
					Totalizer Decimal Position	2.7.3.2
					Totalizer Multiplier	2.7.3.3
					Inflow/Discharge Adjust	2.7.3.4
		Alarma	S			
			Level			
				Level (tab	)	
					Long TAG	3.1.2
					(High Level Alarm) Enable	2.8.1.1
					High Level Value On	2.8.1.2
					High Level Value Off	2.8.1.3
					Assigned Relay	2.8.1.4
					Alarm State	2.8.1.5
					(In-bounds Level Alarm) Enable	2.8.4.1
					High Level Value	2.8.4.2
					Low Level Value	2.8.4.3
					Assigned Relay	2.8.4.4
					Alarm State	2.8.4.5
					(Low Level Alarm) Enable	2.8.2.1
					Low Level Value On	2.8.2.2
					Low Level Value Off	2.8.2.3
					Assigned Relay	2.8.2.4
					Alarm State	2.8.2.5
					(Out-of-bounds Level Alarm) Enable	2.8.5.1
					High Level Value	2.8.5.2
					Low Level Value	2.8.5.3
					Assigned Relay	2.8.5.4
					Alarm State	2.8.5.5
				Alarms (ta	ab)	
					Long TAG	3.1.2
					(Low Temperature Alarm) Enable	2.8.6.1
					Low Temperature Value On	2.8.6.2
					Low Temperature Value Off	2.8.6.3
					Assigned Relay	2.8.6.4
					Alarm State	2.8.6.5
					(High Temperature Alarm) Enable	2.8.7.1
					High Temperature Value On	2.8.7.2
					High Temperature Value Off	2.8.7.3
					Assigned Relay	2.8.7.4

Configu	parameter		
Conngu	number		
		Alarm State	2.8.7.5
		(Switch DI Alarm) Enable	2.8.3.1
		Discrete Input Number	2.8.3.2
		Discrete Input State	2.8.3.3
		Assigned Relay	2.8.3.4
		Alarm State	2.8.3.5
		(Fail-safe Fault Alarm) Enable	2.8.8.1
		Assigned Relay	2.8.8.2
		Alarm State	2.8.8.3
		Relay 1 Logic	2.8.11.1
		Relay 2 Logic	2.8.11.2
		Relay 3 Logic	2.8.11.3
		Level To Spill	2.8.12.1
		Minutes Left To Spill	2.8.12.2
	Flowrate	e (tab)	
		Long TAG	3.1.2
		(High Flowrate Alarm) Enable	2.8.9.1
		High Flowrate Value On	2.8.9.2
		High Flowrate Value Off	2.8.9.3
		Assigned Relay	2.8.9.4
		Alarm State	2.8.9.5
		(Low Flowrate Alarm) Enable	2.8.10.1
		Low Flowrate Value On	2.8.10.2
		Low Flowrate Value Off	2.8.10.3
		Assigned Relay	2.8.10.4
		Alarm State	2.8.10.5
	Discrete Inputs (t	ab)	
	Long TA	G	3.1.2
	(Backup	Level Override) Enable	2.9.1.1
	Level Ov	erride Value	2.9.1.2
	Discrete	Input Number	2.9.1.3
	Discrete	Input 1 Logic	2.9.2.1
	Discrete	Input 1 Scaled State	2.9.2.2
	Discrete	Input 2 Logic	2.9.2.3
	Discrete	Input 2 Scaled State	2.9.2.4
	(Pump Ir	nterlock) Enable Pump 1	2.9.3.1
	Pump 1 I	Discrete Input	2.9.3.2
	(Pump Ir	nterlock) Enable Pump 2	2.9.3.3
	Pump 2 I	Discrete Input	2.9.3.4
	Data Logging (tab	)	
	Long TA	G	3.1.2
	(Process	s Value Log) Enable	2.10.1.1

Configure/Setun Function Group (cont/d)					parameter		
					number		
					Process Va	alues Log Rate	2.10.1.2
					(Alarm Log	g) Enable	2.10.2.1
					Flow Log N	Node	2.10.3.1
					Standard F	Flow Log Interval	2.10.3.3
					Standard F	Flow Log Setpoint	2.10.3.4
					Rapid Flow	v Log Interval	2.10.3.5
					Rapid Flow	v Log Setpoint	2.10.3.6
				Other Co	ontrol (tab)		
					Long TAG		3.1.2
					(Elapsed T	ïme Relay) Enable	2.11.1.1
					Interval		2.11.1.2
					Relay Dura	ation	2.11.1.3
					Assigned I	Relay	2.11.1.4
					Relay Logi	C	2.11.1.5
					(Time of D	ay Relay) Enable	2.11.2.1
					Activation	Time	2.11.2.2
					Relay Dura	ation	2.11.2.3
					Assigned I	Relay	2.11.2.4
					Relay Logi	C	2.11.2.5
					(External T	otalizer) Enable	2.11.3.1
					Multiplier		2.11.3.2
					Relay Dura	ation	2.11.3.3
					Assigned I	Relay	2.11.3.4
					Relay Logi	C	2.11.3.5
					(External S	Sampler) Enable	2.11.4.1
					Multiplier	-	2.11.4.2
					Interval		2.11.4.3
					Relay Dura	ation	2.11.4.4
					Assigned I	Relay	2.11.4.5
					Relay Logi	C	2.11.4.6
			Signal	Processir	ng		
			-	Tempera	iture and Ve	elocity	
					Temperatu	ire and Velocity (tab)	
						Long TAG	3.1.2
						Sound Velocity	2.12.1.1
						Process Temperature	2.12.1.2
			1			Temperature Source	2.12.1.3
						Fixed Temperature	2.12.1.4
						Sound Velocity at 20 degrees C	2.12.1.5
				Echo Sel	lect	· · ·	1
					Echo Sele	ct (tab)	1
						Long TAG	3.1.2

Configure/Setup Function Group (cont'd)					parameter
	-				
				Algorithm False Threadeald	2.12.2.1
				Echo Inreshold	2.12.2.2
				Reform Echo	2.12.2.3
				Narrow Echo Filter	2.12.2.4
			<u></u>	Submergence Detection	2.12.2.5
		Echo Pro	ofile		
			Echo Pro	file (tab)	
				Long TAG	3.1.2
				Measure	
				Level Measurement	2.12.5.1
				Distance Measurement	2.12.5.3
				Near Range	2.2.4
				Confidence	3.2.9.2
				Echo Strength	3.2.9.3
				Algorithm	2.12.2.1
		TVT Set	up		
			TVT Setu	ip (tab)	
				Long TAG	3.1.2
				Hover Level	2.12.3.3
				Shaper Mode	2.12.3.4
				Auto False Echo Suppression	2.12.3.1
				Auto False Echo Suppression	2.12.3.2
				Range	
				Learn	
		TVT Sha	iper		
			TVT Shap	per (tab)	
				Long TAG	3.1.2
				Measure	
				Shaper Mode	2.12.3.4
				Transfer to device	
				TVT Breakpoints	
	Date	and Time			
		Daylight	Saving		
			Daylight	Saving (tab)	
				Long TAG	3.1.2
				Enable	2.14.3.1
				Starting Ordinal	2.14.3.2
				Starting Day	2.14.3.3
				Starting Month	2.14.3.4
				Ending Ordinal	2.14.3.5
				Ending Day	2.14.3.6
				Ending Month	2.14.3.7

Config	nfigure/Setup Function Group (cont'd)					
	Flow					
		Flow (ta	<i>b)</i>			
			Long TAG	3.1.2		
			Primary Measuring Device	2.15.1		
			Linearization			
			Method of Flow Calculation	2.15.3.1		
			Flow Exponent	2.15.3.2		
			Maximum Head	2.15.3.3		
			Maximum Flow at 20 mA	2.15.3.4		
			Zero Head Offset	2.15.3.5		
			Flowrate Decimal	2.15.3.6		
			Flowrate Units	2.15.3.7		
			User Defined Unit	2.15.3.8		
			Low Flow Cutoff	2.15.3.9		
	Totaliz	zers	S			
		Totalizer	s (tab)			
			Long TAG	3.1.2		
			(OCM) Daily Totalizer	2.16.1		
			(OCM) Running Totalizer	2.16.2		
			(OCM) Totalizer Decimal Position	2.16.3		
			(OCM) Totalizer Multiplier	2.16.4		
			(OCM) Low Flow Cutoff	2.15.3.9		
			(Pumped Volume) Running Totalizer	2.7.3.1		
			(Pumped Volume) Totalizer Decimal Positi	ion 2.7.3.2		
			(Pumped Volume) Totalizer Multiplier	2.7.3.3		
	Local	Display				
		Local Di	splay (tab)			
			Long TAG	3.1.2		
			Language	6		
	MAINTENA	NCE & DI	GNOSTICS			
	Diagn	ostics				
		Pump Re	cords			
			Set Pumps Runtimes (tab)			
			Long TAG	3.1.2		
			Run Time Relay 2	3.2.7.1		
			Run Time Relay 3	3.2.7.2		
			Relay Pump 1	3.2.7.3		
			Relay Pump 2	3.2.7.4		
			Set Pumps Runtimes			
		Wear				
			Wear (tab)			
			Long TAG	3.1.2		

Config	ure/Setup F	unction Group (c	cont'd)	parameter number
			Power-on Time	3.2.5
			Power-on Resets	3.2.4
			Process Temperature	2.12.1.2
			Highest Value	3.2.8.1
			Lowest Value	3.2.8.2
			Reset Min/Max Temperatures	
		Echo Quality		
		Echo Qu	ıality (tab)	
			Long TAG	3.1.2
			Figure of Merit	3.2.9.1
			Confidence	3.2.9.2
			Echo Strength	3.2.9.3
			Noise Average	3.2.9.4
		1 1	Noise Peak	3.2.9.5
	Main	tenance	1	
		Transducer Enabl	le	
		Transdu	cer Enable <i>(tab)</i>	
			Long TAG	3.1.2
			Transducer Enable	3.3.1
		Remaining Device	e Lifetime	
		Remain	ing Device Lifetime (tab)	
			Long TAG	3.1.2
			Time Units	
			Lifetime (Expected)	3.3.3.1
			Time in Operation	3.3.3.2
			Remaining Lifetime	3.3.3.3
			Activation of Reminders	3.3.3.4
			Reminder 1 before Lifetime (Required)	3.3.3.5
			Reminder 2 before Lifetime (Demanded)	3.3.3.6
			Snooze for 1 year	
		Remaining Senso	or Lifetime	
		Remain	ing Sensor Lifetime (tab)	
			Long TAG	3.1.2
			Time Units	
			Lifetime (Expected)	3.3.4.1
			Time in Operation	3.3.4.2
			Remaining Lifetime	3.3.4.3
			Activation of Reminders	3.3.4.4
			Reminder 1 before Lifetime (Required)	3.3.4.5

Configu	Configure/Setup Function Group (cont'd)				
				Reminder 2 before Lifetime	3.3.4.6
				Sensor Benlaced	
		_		Spooze for 1 year	
		Service	Schedule		
		OCI VICE .	Service S	chedule (tah)	
				Long TAG	31.2
				Time Units	
				Service Interval	3.3.5.1
				Time Since Last Service	3.3.5.2
				Time Until Next Service	3.3.5.3
				Activation of Reminders	3.3.5.4
				Reminder 1 before Service (Required)	3.3.5.5
				Reminder 2 before Service (Demanded)	3.3.5.6
				Service Performed	
		Calibrati	on Schedu	le	
			Calibration	n Schedule (tab)	
				Long TAG	3.1.2
				Time Units	
				Calibration Interval	3.3.6.1
				Time Since Last Calibration	3.3.6.2
				Time Until Next Calibration	3.3.6.3
				Activation of Reminders	3.3.6.4
				Reminder 1 before Calibration (Required)	3.3.6.5
				Reminder 2 before Calibration (Demanded)	3.3.6.6
				Calibration Performed	
	Соммини	CATION		•	
	Comn	nunication			
		Сотти	nication (ta	b)	
			Long TAG		3.1.2
			Manufact	urer's ID	
			Product ID	)	
			Device Re	vision	
			EDD Revis	sion	
			Device ID		
			Universal	Command Revision	
			Protocol		
			Common I	Practice Command Revision	
			Cfg chng o	count	

Con	Configure/Setup Function Group (cont'd)						
			Polling Address				
				Loop Current Mode			
				Number of Response Preambles			
				Number of Request Preambles			
	SE						
		Securi	Security				
			Security	r (tab)			
				Long TAG	3.1.2		
				Write Protection	5.1		
	CH	CHARACTERISTICS					
			Certifica	Certificates / Approvals (tab)			
				Long TAG	3.1.2		
				Device Certification			

Device	parameter number		
	DEVICE DIAGN	DSTICS	
	Status		
	Si		
		Long TAG	3.1.2
		(Device Status listing)	
	HW/FW-S	Status	
	H	W/FW-Status (tab)	
		Long TAG	3.1.2
		(HW/FW-Status listing)	
	Maintena	nce	
	H	W/FW-Status (tab)	
		Long TAG	3.1.2
		(Device Lifetime Status listing)	
		Acknowledge Warnings	3.3.3.9
		(Sensor Lifetime Status listing)	
		Acknowledge Warnings	3.3.4.9
		(Service Schedule Status listing)	
		Acknowledge Warnings	3.3.5.9
		(Calibration Schedule Status listing)	
		Acknowledge Warnings	3.3.6.9
	Echo Prof	ïle	
	Ed	cho Profile (tab)	
		Long TAG	3.1.2
		Measure	
		Level Measurement	2.12.5.1

Device Diagnostics Function Group (cont'd)				parameter number	
				Distance Measurement	2.12.5.3
				Near Range	2.2.4
				Confidence	3.2.9.2
				Echo Strength	3.2.9.3
				Algorithm	2.12.2.1

Process	s Variables Func	tion Group	parameter number		
	PROCESS VARIAB	LES			
	Process Var				
	Over	Overview			
		Overview (tab)			
		Long TAG	3.1.2		
		Analog Out(PV) =			
		Level Measurement	2.12.5.1		
		Range			
		Loop Current			
	Tem	perature			
		Temperature (tab)			
		Long TAG	3.1.2		
		Process Temperature	2.12.1.2		
		Highest Value	3.2.8.1		
		Lowest Value	3.2.8.2		
	Tota	lizers			
		Totalizers (tab)			
		Long TAG	3.1.2		
		(OCM) Daily Totalizer	2.16.1		
		(OCM) Running Totalizer	2.16.2		
		(Pumped Volume) Running Totalizer	2.7.3.1		
	Tren	d View			
		Trend View (tab)			
		Long TAG	3.1.2		
		Level Measurement	2.12.5.1		
		Space Measurement	2.12.5.2		
		Distance Measurement	2.12.5.3		
	Disc	rete Inputs and Relays View			
		Discrete Inputs and Relays (tab)			
		Long TAG	3.1.2		
		Relay 1 Programming			
		Relay 2 Programming			
		Relay 3 Programming			

Process Variables Function Group (cont'd)					parameter number	
					Relay 1 Activated	
					Relay 2 Activated	
					Relay 3 Activated	
					Discrete Input 1 Programming	
					Discrete Input 2 Programming	
					Discrete Input 1 Scaled State	2.9.2.2
					DIscrete Input 2 Scaled State	2.9.2.4

# Operation via Field Communicator 375/475 (FC375/FC475) (HART)

# Features

The FC375/FC475 HART Communicator is a handheld communication device that is easy to use, and provides universal support for other HART devices, such as the SITRANS LUT400.

# **Functions**

The menu structure of the FC375/475 is very similar to that of AMS Device Manager (see *Operation via AMS Device Manager (HART)* on page 47 for more detail).

• In order to configure this HART device, just as with AMS, the configuration software requires the HART Electronic Device Description (EDD) for the instrument.

# To install a new EDD

- Go to <u>www.siemens.com/sitransLUT400</u> > Support > Software Downloads to download the most up-to-date EDD from the product page of our website.
- Save the files to your computer and extract the zipped file to an easily accessed location.
- To install the EDD, run Emerson's *Field Communicator Easy Upgrade Utility*.

# Configuring a new device

- 1) Check that you have the most recent EDD, and if necessary update it (see *To install a new EDD* above).
- 2) Configure the device using the Quick Start Wizard.

Before initiating a Quick Start Wizard to configure the device, you may wish to gather the necessary parameter values. Parameter Configuration Charts listing all parameters and available options for each application type are available on our website. Go to: <a href="http://www.siemens.com/sitransLUT400">www.siemens.com/sitransLUT400</a> Support > Application Guides. You can record data and select from options on the chart that apply to your application, then complete the Quick Start Wizard using the FC375/475.

# HART FC375/FC475 Menu Structure

#### Notes:

- HART Communicator 375/475 is supported by SITRANS LUT400 HART. The menu structure is aligned with the menu structure for AMS Device Manager.
- For date fields, the format for HART FC375/FC475 is MM-DD-YYYY.

### SITRANS LUT400

## 1 PV Level

### 2 Configuration

#### **1 Identification**

- 1 TAG
- 2 Long TAG
- 3 Descriptor
- 4 Message 5 Date
- 6 Device
- 1 Manufacturer
- 2 Product Name
- 3 Product
- 4 Order Number
- 5 Serial Number
- 6 Final Assembly Nu..
- 7 Hardware Revision
- 8 Firmware Revision
- 9 Loader Revision
- EDD Version
- Date of Manufacturi... Order Option

## 2 Wizards

- 1 Wizard Quick Start...
  - 1 Step 1 of 5: Identification
    - 1 TAG
    - 2 Long TAG
    - 3 Descriptor
    - 4 Message
    - 5 Date
    - 6 Order Number
    - 7 Language
    - 8 =========== 9 Step 2 of 5: Application
      - 1 Transducer
        - 2 Application Type
        - 3 Temperature Source
        - 4 Fixed Temperature
        - 5
        - 6
        - 7 =======

8 Step 4 of 5: Ranges 1 Units 2 Low Calib. Pt. 3 High Calib. Pt. **4** Response Rate 5 6 7 ================ 8 Step 5 of 5: Summary 1 TAG 2 Long TAG **3 Descriptor** 4 Message 5 Date 6 Language 7 -----8 Transducer 9 Application Type Temperature Source Fixed Temperature ------Units Low Calib. Pt. High Calib. Pt. **Response Rate** \_\_\_\_\_ Sensor Mode Current Output Func. \_\_\_\_\_ HOME to finish wiza. 2 Wizard - Pump Control... 1 Step 1 of 4: Application **1** Pump Control Enable 2 3 Relay Pump 1 4 Relay Pump 2 5 7 Step 2 of 4: Vessel Regime 1 Pump Control Mode 2 Serv Ratio Pump 1 3 Serv Ratio Pump 2 4 5 6 ================ 7 Step 3 of 4: Pump Setpoints 1 ON Setpoint Pump 1 2 OFF Setpoint Pump 1 3 ON Setpoint Pump 2 4 OFF Setpoint Pump 2 5 6 =================

**Operation - FC375** 

7 Step 4 of 4: Summary 1 Pump Control Enable 2 Relay Pump 1 3 Relay Pump 2 4 ------5 Pump Control Mode 6 Serv Ratio Pump 1 7 Serv Ratio Pump 2 8 ------9 ON Setpoint Pump 1 OFF Setpoint Pump 1 ON Setpoint Pump 2 0 FF Setpoint Pump 2

\_\_\_\_\_

HOME to finish wiza ...

#### **3 Operation**

1 Select Analog Output 2 Auto Zero Head 1 Zero Head Offset 2 Head 3 Actual Head Value 3 Auto Sensor Offset 1 Sensor Offset 2 Distance 3 Desired Distance fo... 4 Auto Sound Velocity 1 Sound Veloc at 20 C 2 Distance 3 Desired Distance fo... 5 Loop-Test 6 Master Reset 1 Yes 2 No 7 Reset Min/Max Temp. **8 OCM Flow Totalizers 1 Reset Daily Totalizer** 2 Reset Running Totalizer 9 Pumped Volume Totalizer 1 Reset Running Totalizer **Configuration Flag Reset** 1 Yes 2 No

# 4 Setup

1 Sensor

1 Units 2 Sensor Mode 3 Sensor Mode Seco... 4 Transducer 5 Frequency 6 Long Shot Duration 7 Short Shot Duration

1 Low Calib. Pt. 2 High Calib. Pt. 3 Sensor Offset 4 Near Range 5 Far Range 3 Rate 1 Fill Rate per Minute 2 Empty Rate per Mi... **3 Damping Filter** 4 Fail-Safe 1 Material Level 2 LOE Timer 3 Fail-Safe mA Value **5** Current Output 1 Current Output Func. 2 Start Scale (=4 mA) 3 Full Scale (=20 mA) 4 Minimum mA Limit 5 Maximum mA Limit 6 Volume **1 Vessel Shape** 2 Volume Units 3 Maximum Volume 4 Vessel Dimension A 5 Vessel Dimension L 6 User Defined Unit 7 Pumps 1 Basic Setup **1** Pump Control Enable 2 Relay Pump 1 3 Relay Pump 2 4 Pump Control Mode 5 ON Setpoint Pump 1 6 OFF Setpoint Pump 1 7 ON Setpoint Pump 2 8 OFF Setpoint Pump 2 9 Serv Ratio Pump 1 Serv Ratio Pump 2 2 Modifiers

**1 Wall Cling Reduction** 

1 Enable

2 Level Setpoint Vari...

2 Energy Savings 1 Enable 2 Peak Lead Time 3 Peak 1 Start Time 4 Peak 1 End Time 5 Peak 2 Start Time 6 Peak 2 End Time 7 Peak 3 Start Time 8 Peak 3 End Time 9 Peak 4 Start Time Peak 4 End Time Peak 5 Start Time Peak 5 End Time Peak ON Pump 1 Peak OFF Pump 1 Peak ON Pump 2 Peak OFF Pump 2 3 Pump Run-On 1 Enable 2 Run-On Interval 3 Run-On Dur Pump 1 4 Run-On Dur Pump 2 **4 Pump Start Delays** 1 Pump Start Delay 2 Power Resumption Del... **3** Totalizers 1 Running Total High 2 Running Total Low 3 Totalizer Dec. Pos.

3 Totalizer Multiplier

4 Inflow/Disch. Adj.

#### 8 Alarms

1 Level

1 High Level Alarm 1 Enable 2 High Level Value On 3 High Level Value Off 4 Assigned Relay 5 Alarm State 2 In-Bounds Level Alarm 1 Enable 2 High Level Value 3 Low Level Value 4 Assigned Relay 5 Alarm State 3 Low Level Alarm 1 Enable 2 Low Level Value On 3 Low Level Value Off 4 Assigned Relay 5 Alarm State

4 Out-of-Bounds Level Alarm 1 Enable 2 High Level Value 3 Low Level Value 4 Assigned Relay 5 Alarm State 2 Alarms 1 Low Temperature Alarm 1 Enable 2 Low Temp. Value On 3 Low Temp. Value Off 4 Assigned Relay 5 Alarm State 2 High Temperature Alarm 1 Enable 2 High Temp. Value... 3 High Temp. Value... 4 Assigned Relay 5 Alarm State 3 Switch (DI) Alarm 1 Enable 2 Discrete Input Num... **3 Discrete Input State** 4 Assigned Relay 5 Alarm State 4 Fail-safe Fault Alarm 1 Fnable 2 Assigned Relay 3 Alarm State **5 Relay Logic** 1 Relay 1 Logic 2 Relay 2 Logic 3 Relay 3 Logic 6 Time to Spill 1 Level to Spill 2 Minutes Left to Spill 3 Flowrate 1 High Flowrate Alarm 1 Enable 2 High Flowrate Valu... 3 High Flowrate Valu... 4 Assigned Relay 5 Alarm State 2 Low Flowrate Alarm 1 Enable 2 Low Flowrate Valu... 3 Low Flowrate Valu... 4 Assigned Relay 5 Alarm State 9 Discrete Inputs 1 Backup Level Override 1 Fnable 2 Level Override Value

3 Discrete Input Num...

2 Discrete Input Logic 1 DI 1 Logic 2 DI 1 Scaled State 3 DI 2 Logic 4 DI 2 Scaled State 3 Pump Interlock 1 Enable Pump 1 2 Pump 1 DI 3 Enable Pump 2 4 Pump 2 DI Data Logging 1 Process Value Log 1 Enable 2 Proc Val Log Rate 2 Alarm Log 1 Enable 3 Flow Log 1 Flow Log Mode 2 Std. Log Interval 3 Std. Log Setpoint 4 Rapid Log Interval 5 Rapid Log Setpoint Other Control 1 Elapsed Time Relay 1 Enable 2 Interval 3 Relay Duration 4 Assigned Relay **5 Relay Logic** 2 Time of Day Relay 1 Fnable 2 Activation Time 3 Relay Duration 4 Assigned Relay **5 Relay Logic** 3 External Totalizer 1 Fnable 2 Multiplier 3 Relay Duration 4 Assigned Relay 5 Relay Logic 4 External Sampler 1 Enable 2 Multiplier 3 Interval 4 Relay Duration 5 Assigned Relay 6 Relay Logic Signal Processing 1 Temperature and Velocity 1 Sound Velocity 2 Process Temperature 3 Temperature Source 4 Fixed Temperature 5 Sound Veloc at 20 C

2 Echo Select

- 1 Algorithm
  - 2 Echo Threshold
  - 3 Reform Echo
  - 4 Narrow Echo Filter
  - **5** Submerge Detection
- 3 Echo Profile
  - 1 Echo Profile
    - 2 Level
    - 3 Distance
    - 4 Near Range
    - 5 Confidence
    - 6 Echo Strength
    - 7 Algorithm
- 4 TVT Setup
  - 1 Auto Echo Sup Mode.
    - 1 Auto Echo Sup Mode
      - 2 Auto Echo Sup Ran...
      - 3 Learn
  - 2 Hover Level
  - 3 Shaper Mode
  - 4 TVT Breakpoints

#### Date and Time

- 1 Daylight Saving
  - 1 Enable
  - 2 Starting Ordinal
  - 3 Starting Day
  - 4 Starting Month
  - 5 Ending Ordinal
  - 6 Ending Day
  - 7 Ending Month

#### Flow

- 1 OCM PMD
- 2 Basic Setup
  - 1 Method of Flow Cal... 2 Flow Exponent 3 Maximum Head 4 Maximum Flow at... 5 Zero Head Offset 6 Flowrate Decimal 7 Flowrate Units 8 User Defined Unit
  - 9 Low Flow Cutoff

# Totalizers

- 1 OCM Flow Totalizers
  - 1 Daily Total High 2 Daily Total Low 3 Running Total High 4 Running Total Low
  - 5 Totalizer Dec. Pos.
  - 6 Totalizer Multiplier
  - 7 Low Flow Cutoff

2 Pumped Volume Totalizer 1 Running Total High 2 Running Total Low 3 Totalizer Dec. Pos. 4 Totalizer Multiplier

Local Display

1 Language

#### 5 Maintenance & Diagnostics

1 Diagnostics

1 Pump Records

1 Set Pumps Runtimes

. 1 Run Time Relay 2

2 Run Time Relay 3

3 Relay Pump 1

4 Relay Pump 2

5 Set Pumps Runtimes

2 Wear

1 Power-on TIme

2 Power-on Resets

3 Temperature

1 Process Temperature

2 Highest Value

3 Lowest Value

4 Reset Min/Max Te...

3 Echo Quality

1 Figure of Merit

2 Confidence

3 Echo Strength

4 Noise Average

5 Noise Peak

2 Maintenance

1 Transducer Enable

2 Device Remain Life

1 Time Units

2 Lifetime (Expected)

3 Time in Operation

4 Remaining Lifetime

5 Activation of Remi...

6 Lifetime Remind 1

7 Lifetime Remind 2

8 Snooze for 1 year

3 Sensor Remain Life

1 Time Units

2 Lifetime (Expected)

3 Time in Operation

4 Remaining Lifetime 5 Activation of Remi...

- 5 Activation of Remi.
- 6 Sensor Remind 1
- 7 Sensor Remind 2
- 8 Sensor Replaced
- 9 Snooze for 1 year
4 Service Schedule

- 1 Time Units
- 2 Service Interval
- 3 Since Last Service 4 Until Next Service
- 5 Activation of Remi...
- 6 Service Remind 1
- 7 Service Remind 2
- 8 Service Performed
- 5 Calibration Schedule
  - 1 Time Units
  - 2 Calibration Interval
  - 3 Since Last Calibrat... 4 Until Next Calibrat...
  - 5 Activation of Remi...
  - 6 Cal. Remind 1
  - 7 Cal. Remind 2
  - 8 Cal. Performed

#### 6 Communication

- 1 Manufacturer's ID
- 2 Product ID
- 3 Device Revision
- 4 EDD Revision
- 5 Device ID
- 6 Universal Comman...
- 7 Protocol
- 8 Common Practice....
- 9 Cfg chng count
  - HART Communicati...
    - 1 Polling Address
    - 2 Loop Current Mode
    - 3 Number of Respons... 4 Number of Request...

#### 7 Security

1 Write Protection

#### 8 Characteristics

1 Certificates / Approvals 1 Device Certification

#### 3 Device Diagnostics

1 Device Status <Device status listing> 2 HW/FW-Status <HW/FW-Status listing> 3 Maintenance 1 Device Lifetime 1 Status 2 Ack Status 3 Ack Warnings 2 Sensor Lifetime 1 Status 2 Ack Status 3 Ack Warnings

**3 Service Schedule** 1 Status 2 Ack Status 3 Ack Warnings **4** Calibration Schedule 1 Status 2 Ack Status 3 Ack Warnings 4 Echo Profile 1 Fcho Profile 2 Level 3 Distance 4 Near Range 5 Confidence 6 Echo Strength 7 Algorithm 4 Process Variables 1 Overview 1 Measured Value 2 Analog Out(PV) = 3 Level 4 Space 5 Distance 6 PV Range 7 Loop Current 2 Temperature **1** Process Temperature 2 Highest Value 3 Lowest Value 3 Totalizers **1 OCM Flow Totalizers** 1 Daily Total High 2 Daily Total Low **3 Running Total High 4** Running Total Low 2 Pumped Volume Totalizer 1 Running Total High 2 Running Total Low 4 Trend View 5 Discrete Inputs and Relays 1 Relay Programmed State 1 Relay 1 Programmi... 2 Relay 2 Programmi... 3 Relay 3 Programmi... 4 Relay 1 Activated 5 Relay 2 Activated 6 Relay 3 Activated 2 Discrete Input Programmed State 1 DI 1 Programmed 2 DI 2 Programmed 3 DI 1 Scaled State 4 DI 2 Scaled State 5 SITRANS LUT400 <Device Image>

#### SITRANS LUT400

#### 1 PV Volume

#### 2 Configuration

#### 1 Identification

- 1 TAG 2 Long TAG
- 3 Descriptor
- 4 Message
- 5 Date
- 6 Device
- 1 Manufacturer
- 2 Product Name
- 3 Product
- 4 Order Number
- 5 Serial Number
- 6 Final Assembly Nu..
- 7 Hardware Revision
- 8 Firmware Revision
- 9 Loader Revision
- EDD Version
- Date of Manufacturi... Order Option
- 2 Wizards
  - 1 Wizard Quick Start...
    - 1 Step 1 of 5: Identification
      - 1 TAG
      - 2 Long TAG
      - 3 Descriptor
      - 4 Message
      - 5 Date
      - 6 Order Number
      - 7 Language
      - 8 =========
      - 9 Step 2 of 5: Application
        - 1 Transducer
          - 2 Application Type
          - 3 Temperature Source
          - 4 Fixed Temperature
          - 5 6
          - 。 7 ========
          - 8 Step 3 of 5: Vessel Shape
            - 1 Vessel Shape
              - 2 3 Vessel Shape
              - 5 vessel Shape
              - 5
              - 6
              - 7 ========

**Operation - FC375** 

8 Step 4 of 5: Ranges 1 Units 2 Low Calib. Pt. 3 High Calib. Pt. 4 Response Rate **5** Volume Units 6 Maximum Volume 7 Vessel Dimension A 8 Vessel Dimension L 9 Vessel Shape \_\_\_\_\_ Step 5 of 5: Summary 1 TAG 2 Long TAG 3 Descriptor 4 Message 5 Date 6 Language 7 -----8 Transducer 9 Application Type Temperature Source **Fixed Temperature** -----Vessel Shape \_\_\_\_\_ Units Low Calib. Pt. High Calib. Pt. **Response Rate** Volume Units Maximum Volume Vessel DimensionA Vessel Dimension L \_\_\_\_\_ Sensor Mode Current Output Func. \_\_\_\_\_ HOME to finish wiza.

 7 Step 3 of 4: Pump Setpoints 1 ON Setpoint Pump 1 2 OFF Setpoint Pump 1 3 ON Setpoint Pump 2 4 OFF Setpoint Pump 2 5 6 ================ 7 Step 4 of 4: Summary 1 Pump Control Enable 2 Relay Pump 1 3 Relay Pump 2 4 -----5 Pump Control Mode 6 Serv Ratio Pump 1 7 Serv Ratio Pump 2 8 -----9 ON Setpoint Pump 1 **OFF Setpoint Pump 1 ON Setpoint Pump 2** OFF Setpoint Pump 2 \_\_\_\_\_ HOME to finish wiza...

#### **3 Operation**

1 Select Analog Output 2 Auto Zero Head 1 Zero Head Offset 2 Head **3 Actual Head Value** 3 Auto Sensor Offset 1 Sensor Offset 2 Distance 3 Desired Distance fo... 4 Auto Sound Velocity 1 Sound Veloc at 20 C 2 Distance 3 Desired Distance fo... 5 Loop-Test 6 Master Reset 1 Yes 2 No 7 Reset Min/Max Temp. 8 OCM Flow Totalizers 1 Reset Daily Totalizer 2 Reset Running Totalizer 9 Pumped Volume Totalizer 1 Reset Running Totalizer **Configuration Flag Reset** 1 Yes 2 No

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#### 4 Setup

1 Sensor

- 1 Units
- 2 Sensor Mode
- 3 Sensor Mode Seco...
- 4 Transducer
- 5 Frequency
- 6 Long Shot Duration
- 7 Short Shot Duration

#### 2 Calibration

- 1 Low Calib. Pt.
- 2 High Calib. Pt.
- 3 Sensor Offset
- 4 Near Range
- 5 Far Range
- 3 Rate
- 1 Fill Rate per Minute
- 2 Empty Rate per Mi...
- 3 Damping Filter
- 4 Fail-Safe
  - 1 Material Level
  - 2 LOE Timer
  - 3 Fail-Safe mA Value
- 5 Current Output
  - 1 Current Output Func.
  - 2 Start Scale (=4 mA)
  - 3 Full Scale (=20 mA)
  - 4 Minimum mA Limit
  - 5 Maximum mA Limit
- 6 Volume
- 1 Vessel Shape
- 2 Volume Units
- 3 Maximum Volume
- 4 Vessel Dimension A
- 5 Vessel Dimension L
- 6 User Defined Unit
- 7 Linearization
  - 1 Characteristic
  - 2 Edit Characteristic
  - Level <1 to 32>
    - Volume <1 to 32>

#### 7 Pumps

- 1 Basic Setup
  - 1 Pump Control Enable 2 Relay Pump 1 3 Relay Pump 2 4 Pump Control Mode 5 ON Setpoint Pump 1 6 OFF Setpoint Pump 1 7 ON Setpoint Pump 2 8 OFF Setpoint Pump 2 9 Serv Ratio Pump 1 Serv Ratio Pump 2

2 Modifiers **1 Wall Cling Reduction** 1 Enable 2 Level Setpoint Vari... 2 Energy Savings 1 Enable 2 Peak Lead Time 3 Peak 1 Start Time 4 Peak 1 End Time 5 Peak 2 Start Time 6 Peak 2 End Time 7 Peak 3 Start Time 8 Peak 3 End Time 9 Peak 4 Start Time Peak 4 End Time Peak 5 Start Time Peak 5 End Time Peak ON Pump 1 Peak OFF Pump 1 Peak ON Pump 2 Peak OFF Pump 2 3 Pump Run-On 1 Enable 2 Run-On Interval 3 Run-On Dur Pump 1 4 Run-On Dur Pump 2 **4 Pump Start Delays** 1 Pump Start Delay 2 Power Resumption Del... 3 Totalizers **1** Running Total High 2 Running Total Low 3 Totalizer Dec. Pos. **3 Totalizer Multiplier** 4 Inflow/Disch. Adj. 1 l evel 1 High Level Alarm 1 Enable 2 High Level Value On 3 High Level Value Off 4 Assigned Relay 5 Alarm State 2 In-Bounds Level Alarm 1 Enable 2 High Level Value 3 Low Level Value 4 Assigned Relay 5 Alarm State

3 Low Level Alarm

8 Alarms

1 Enable

2 Low Level Value On

3 Low Level Value Off

4 Assigned Relay

5 Alarm State

4 Out-of-Bounds Level Alarm 1 Enable 2 High Level Value 3 Low Level Value 4 Assigned Relay 5 Alarm State 2 Alarms 1 Low Temperature Alarm 1 Enable 2 Low Temp. Value On 3 Low Temp. Value Off 4 Assigned Relay 5 Alarm State 2 High Temperature Alarm 1 Enable 2 High Temp. Value... 3 High Temp. Value... 4 Assigned Relay 5 Alarm State 3 Switch (DI) Alarm 1 Enable 2 Discrete Input Num... **3 Discrete Input State** 4 Assigned Relay 5 Alarm State 4 Fail-safe Fault Alarm 1 Fnable 2 Assigned Relay 3 Alarm State **5 Relay Logic** 1 Relay 1 Logic 2 Relay 2 Logic 3 Relay 3 Logic 6 Time to Spill 1 Level to Spill 2 Minutes Left to Spill 3 Flowrate 1 High Flowrate Alarm 1 Enable 2 High Flowrate Value... 3 High Flowrate Value... 4 Assigned Relay 5 Alarm State 2 Low Flowrate Alarm 1 Enable 2 Low Flowrate Value... 3 Low Flowrate Value... 4 Assigned Relay 5 Alarm State 9 Discrete Inputs 1 Backup Level Override 1 Fnable 2 Level Override Value

3 Discrete Input Num...

2 Discrete Input Logic 1 DI 1 Logic 2 DI 1 Scaled State 3 DI 2 Logic 4 DI 2 Scaled State 3 Pump Interlock 1 Enable Pump 1 2 Pump 1 DI 3 Enable Pump 2 4 Pump 2 DI Data Logging 1 Process Value Log 1 Enable 2 Proc Val Log Rate 2 Alarm Log 1 Enable 3 Flow Log 1 Flow Log Mode 2 Std. Log Interval 3 Std. Log Setpoint 4 Rapid Log Interval 5 Rapid Log Setpoint Other Control 1 Elapsed Time Relay 1 Enable 2 Interval 3 Relay Duration 4 Assigned Relay **5 Relay Logic** 2 Time of Day Relay 1 Fnable 2 Activation Time 3 Relay Duration 4 Assigned Relay **5 Relay Logic 3 External Totalizer** 1 Fnable 2 Multiplier **3 Relay Duration** 4 Assigned Relay **5 Relay Logic** 4 External Sampler 1 Enable 2 Multiplier 3 Interval 4 Relay Duration **5** Assigned Relay 6 Relay Logic Signal Processing 1 Temperature and Velocity 1 Sound Velocity 2 Process Temperature 3 Temperature Source 4 Fixed Temperature 5 Sound Veloc at 20 C

2 Echo Select 1 Algorithm 2 Echo Threshold 3 Reform Echo **4 Narrow Echo Filter 5** Submerge Detection 3 Echo Profile 1 Echo Profile 2 Level 3 Distance 4 Near Range 5 Confidence 6 Echo Strength 7 Algorithm 4 TVT Setup 1 Auto Echo Sup Mode. 1 Auto Echo Sup Mode 2 Auto Echo Sup Ran... 3 Learn 2 Hover Level **3 Shaper Mode 4 TVT Breakpoints** Date and Time 1 Daylight Saving 1 Enable 2 Starting Ordinal 3 Starting Day 4 Starting Month **5** Ending Ordinal 6 Ending Day 7 Ending Month Flow 1 0CM PMD 2 Basic Setup 1 Method of Flow Cal... 2 Flow Exponent 3 Maximum Head 4 Maximum Flow at... 5 Zero Head Offset 6 Flowrate Decimal 7 Flowrate Units 8 User Defined Unit 9 Low Flow Cutoff

#### Totalizers

#### 1 OCM Flow Totalizers

1 Daily Total High 2 Daily Total Low 3 Running Total High 4 Running Total Low 5 Totalizer Dec. Pos. 6 Totalizer Multiplier 7 Low Flow Cutoff 2 Pumped Volume Totalizer 1 Running Total High 2 Running Total Low 3 Totalizer Dec. Pos. 4 Totalizer Multiplier

Local Display

1 Language

#### **5 Maintenance & Diagnostics**

1 Diagnostics

1 Pump Records

1 Set Pumps Runtimes

- 1 Run Time Relay 2
- 2 Run Time Relay 3
- 3 Relay Pump 1
- 4 Relay Pump 2
- 5 Set Pumps Runtimes

2 Wear

- 1 Power-on TIme
- 2 Power-on Resets

3 Temperature

- **1** Process Temperature
- 2 Highest Value
- 3 Lowest Value
- 4 Reset Min/Max Te...

3 Echo Quality

- 1 Figure of Merit
- 2 Confidence
- 3 Echo Strength
- 4 Noise Average
- 5 Noise Peak

2 Maintenance

1 Transducer Enable

2 Device Remain Life

1 Time Units

- 2 Lifetime (Expected)
- 3 Time in Operation
- 4 Remaining Lifetime
- 5 Activation of Remi...
- 6 Lifetime Remind 1
- 7 Lifetime Remind 2
- 8 Snooze for 1 year
- 3 Sensor Remain Life
  - 1 Time Units
  - 2 Lifetime (Expected)
  - 3 Time in Operation
  - 4 Remaining Lifetime 5 Activation of Remi...
  - 6 Sensor Remind 1
  - 7 Sensor Remind 1
  - 7 Sensor Remind 2
  - 8 Sensor Replaced
  - 9 Snooze for 1 year

4 Service Schedule

- 1 Time Units
- 2 Service Interval
- 3 Since Last Service
- 4 Until Next Service 5 Activation of Remi...
- 6 Service Remind 1
- 7 Service Remind 2
- 8 Service Performed
- 5 Calibration Schedule
  - 1 Time Units
  - 2 Calibration Interval
  - 3 Since Last Calibrat...
  - 4 Until Next Calibrat...
  - 5 Activation of Remi...
  - 6 Cal. Remind 1 7 Cal. Remind 2
  - 8 Cal. Performed

#### **6** Communication

- 1 Manufacturer's ID
- 2 Product ID
- **3 Device Revision**
- 4 EDD Revision
- 5 Device ID
- 6 Universal Comman...
- 7 Protocol
- 8 Common Practice....
- 9 Cfg chng count
  - HART Communicati...
    - 1 Polling Address
    - 2 Loop Current Mode
    - 3 Number of Respons...
    - 4 Number of Request...

#### 7 Security

1 Write Protection

#### 8 Characteristics

1 Certificates / Approvals 1 Device Certification

#### **3 Device Diagnostics**

1 Device Status <Device status listing> 2 HW/FW-Status <HW/FW-Status listing> 3 Maintenance 1 Device Lifetime 1 Status 2 Ack Status 3 Ack Warnings 2 Sensor Lifetime 1 Status 2 Ack Status 3 Ack Warnings

**3 Service Schedule** 1 Status 2 Ack Status 3 Ack Warnings 4 Calibration Schedule 1 Status 2 Ack Status 3 Ack Warnings 4 Echo Profile 1 Fcho Profile 2 Level 3 Distance 4 Near Range 5 Confidence 6 Echo Strength 7 Algorithm 4 Process Variables 1 Overview 1 Measured Value 2 Analog Out(PV) = 3 Level 4 Space 5 Distance 6 Volume 7 PV Range 8 Loop Current 2 Temperature **1 Process Temperature** 2 Highest Value 3 Lowest Value **3** Totalizers **1 OCM Flow Totalizers** 1 Daily Total High 2 Daily Total Low **3 Running Total High 4 Running Total Low** 2 Pumped Volume Totalizer 1 Running Total High 2 Running Total Low 4 Trend View 5 Discrete Inputs and Relays **1 Relay Programmed State** 1 Relay 1 Programmi... 2 Relay 2 Programmi... 3 Relay 3 Programmi... 4 Relay 1 Activated 5 Relay 2 Activated 6 Relay 3 Activated 2 Discrete Input Programmed State 1 DI 1 Programmed 2 DI 2 Programmed 3 DI 1 Scaled State 4 DI 2 Scaled State **5 SITRANS LUT400** <Device Image>

# Operation - FC375

#### SITRANS LUT400

#### 1 PV Flow

#### 2 Configuration

#### 1 Identification

- 1 TAG
- 2 Long TAG
- 3 Descriptor
- 4 Message 5 Date
- 6 Device
- 1 Manufacturer
- 2 Product Name
- 3 Product
- 4 Order Number
- 5 Serial Number
- 6 Final Assembly Nu..
- 7 Hardware Revision
- 8 Firmware Revision
- 9 Loader Revision
- EDD Version
- Date of Manufacturi... Order Option

#### 2 Wizards

- 1 Wizard Quick Start...
  - 1 Step 1 of 5: Identification
    - 1 TAG
    - 2 Long TAG
    - 3 Descriptor
    - 4 Message
    - 5 Date
    - 6 Order Number
    - 7 Language
    - 8 =========
    - 9 Step 2 of 5: Application
      - 1 Transducer
        - 2 Application Type
        - 3 Temperature Source
        - 4 Fixed Temperature
        - 5
        - 6
        - 7 =======
        - 8 Step 3 of 5: Shape
          - 1 OCM PMD
          - 2 Units
          - 3 Method of Flow Cal...
          - 4 <calculation factor based on PMD>
          - 5 <calculation factor based on PMD>
          - 6 <calculation factor based on PMD>
          - 7 <calculation factor based on PMD>
          - 8 <calculation factor based on PMD>

9 OCM Dimension 1 OCM Dimension 2 OCM Dimension 3 OCM Dimension 4 OCM PMD

Step 4 of 5: Ranges 1 Units 2 Low Calib. Pt. 3 High Calib. Pt. 4 Response Rate 5 Maximum Head 6 Flowrate Units 7 Flowrate Decimal 8 Low Flow Cutoff 9 Maximum Flow at... \_\_\_\_\_ Step 5 of 5: Summary 1 TAG 2 Long TAG 3 Descriptor 4 Message 5 Date 6 Language 7 -----8 Transducer 9 Application Type Temperature Source Fixed Temperature \_\_\_\_\_ OCM PMD Method of Flow Cal.. <calculation factor> <calculation factor> <calculation factor> <calculation factor> <calculation factor> OCM Dimension 1 OCM Dimension 2 **OCM Dimension 3 OCM Dimension 4** \_\_\_\_\_ Units Low Calib. Pt. High Calib. Pt. **Response Rate** Maximum Head Flowrate Units Flowrate Decimal Low Flow Cutoff Maximum Flow at 2..

-----

Sensor Mode Current Output Func. Start Scale (=4 mA) Full Scale (=20 mA)

2 Wizard - Pump Control... 1 Step 1 of 4: Application **1** Pump Control Enable 2 3 Relay Pump 1 4 Relay Pump 2 5 6 ====== 7 Step 2 of 4: Vessel Regime 1 Pump Control Mode 2 Serv Ratio Pump 1 3 Serv Ratio Pump 2 4 5 6 ================ 7 Step 3 of 4: Pump Setpoints 1 ON Setpoint Pump 1 2 OFF Setpoint Pump 1 3 ON Setpoint Pump 2 4 OFF Setpoint Pump 2 5 7 Step 4 of 4: Summary **1 Pump Control Enable** 2 Relay Pump 1 3 Relay Pump 2 4 -----5 Pump Control Mode 6 Serv Ratio Pump 1 7 Serv Ratio Pump 2 8 -----9 ON Setpoint Pump 1 **OFF Setpoint Pump 1 ON Setpoint Pump 2 OFF Setpoint Pump 2** \_\_\_\_\_ HOME to finish wiza... **3 Operation** 1 Select Analog Output 2 Auto Zero Head 1 Zero Head Offset 2 Head **3 Actual Head Value** 3 Auto Sensor Offset 1 Sensor Offset

- 2 Distance
- 3 Desired Distance fo...

4 Auto Sound Velocity 1 Sound Veloc at 20 C 2 Distance 3 Desired Distance fo... 5 Loop-Test 6 Master Reset 1 Yes 2 No 7 Reset Min/Max Temperatures 8 OCM Flow Totalizers **1 Reset Daily Totalizer** 2 Reset Running Totalizer 9 Pumped Volume Totalizer 1 Reset Running Totalizer **Configuration Flag Reset** 1 Yes 2 No

#### 4 Setup

1 Sensor 1 Units 2 Sensor Mode 3 Sensor Mode Seco... 4 Transducer 5 Frequency 6 Long Shot Duration 7 Short Shot Duration 2 Calibration 1 Low Calib. Pt. 2 High Calib. Pt. 3 Sensor Offset 4 Near Range 5 Far Range 3 Rate 1 Fill Rate per Minute 2 Empty Rate per Mi... **3 Damping Filter** 4 Fail-Safe 1 Material Level 2 LOE Timer 3 Fail-Safe mA Value 5 Current Output 1 Current Output Func. 2 Start Scale (=4 mA) 3 Full Scale (=20 mA) 4 Minimum mA I imit 5 Maximum mA Limit 6 Volume **1 Vessel Shape** 2 Volume Units 3 Maximum Volume 4 Vessel Dimension A 5 Vessel Dimension L

**Operation - FC375** 

2 Edit Characteristic Level <1 to 32> Volume <1 to 32> 7 Pumps 1 Basic Setup **1** Pump Control Enable 2 Relay Pump 1 3 Relay Pump 2 4 Pump Control Mode 5 ON Setpoint Pump 1 6 OFF Setpoint Pump 1 7 ON Setpoint Pump 2 8 OFF Setpoint Pump 2 9 Serv Ratio Pump 1 Serv Ratio Pump 2 2 Modifiers **1 Wall Cling Reduction** 1 Enable 2 Level Setpoint Vari... 2 Energy Savings 1 Enable 2 Peak Lead Time 3 Peak 1 Start Time 4 Peak 1 End Time 5 Peak 2 Start Time 6 Peak 2 End Time 7 Peak 3 Start Time 8 Peak 3 End Time 9 Peak 4 Start Time Peak 4 End Time Peak 5 Start Time Peak 5 End Time Peak ON Pump 1 Peak OFF Pump 1 Peak ON Pump 2 Peak OFF Pump 2 3 Pump Run-On 1 Enable 2 Run-On Interval 3 Run-On Dur Pump 1 4 Run-On Dur Pump 2 4 Pump Start Delays 1 Pump Start Delay 2 Power Resumption Del... **3** Totalizers **1** Running Total High 2 Running Total Low 3 Totalizer Dec. Pos. **3 Totalizer Multiplier** 4 Inflow/Disch. Adj.

7 Linearization

1 Characteristic

8 Alarms 1 Level

1 High Level Alarm 1 Enable 2 High Level Value On 3 High Level Value Off 4 Assigned Relay 5 Alarm State 2 In-Bounds Level Alarm 1 Enable 2 High Level Value 3 Low Level Value 4 Assigned Relay 5 Alarm State 3 Low Level Alarm 1 Fnable 2 Low Level Value On 3 Low Level Value Off 4 Assigned Relay 5 Alarm State 4 Out-of-Bounds Level Alarm 1 Enable 2 High Level Value 3 Low Level Value 4 Assigned Relay 5 Alarm State 2 Alarms 1 Low Temperature Alarm 1 Fnable 2 Low Temp. Value On 3 Low Temp. Value Off 4 Assigned Relay 5 Alarm State 2 High Temperature Alarm 1 Enable 2 High Temp. Value... 3 High Temp. Value... 4 Assigned Relay 5 Alarm State 3 Switch (DI) Alarm 1 Enable 2 Discrete Input Num... **3 Discrete Input State** 4 Assigned Relay 5 Alarm State 4 Fail-safe Fault Alarm 1 Enable 2 Assigned Relay 3 Alarm State 5 Relay Logic 1 Relay 1 Logic 2 Relay 2 Logic 3 Relay 3 Logic 6 Time to Spill 1 Level to Spill 2 Minutes Left to Spill

3 Flowrate

1 High Flowrate Alarm 1 Enable 2 High Flowrate Value... 3 High Flowrate Value... 4 Assigned Relay

5 Alarm State 2 Low Flowrate Alarm

1 Enable

2 Low Flowrate Value...

3 Low Flowrate Value...

4 Assigned Relay

5 Alarm State

9 Discrete Inputs 1 Backup Level Override 1 Fnable 2 Level Override Value 3 Discrete Input Num... 2 Discrete Input Logic 1 DI 1 Logic 2 DI 1 Scaled State 3 DI 2 Logic 4 DI 2 Scaled State 3 Pump Interlock 1 Enable Pump 1 2 Pump 1 DI 3 Enable Pump 2 4 Pump 2 DI Data Logging 1 Process Value Log 1 Fnable 2 Proc Val Log Rate 2 Alarm Log 1 Enable 3 Flow Log 1 Flow Log Mode 2 Std. Log Interval 3 Std. Log Setpoint 4 Rapid Log Interval 5 Rapid Log Setpoint Other Control 1 Elapsed Time Relay 1 Enable 2 Interval 3 Relay Duration 4 Assigned Relav **5 Relay Logic** 2 Time of Day Relay 1 Enable 2 Activation Time **3 Relay Duration** 4 Assigned Relay

5 Relay Logic

- 3 External Totalizer
  - 1 Enable
  - 2 Multiplier
  - 3 Relay Duration
  - 4 Assigned Relay
  - 5 Relay Logic
- 4 External Sampler
  - 1 Enable
    - 2 Multiplier
    - 3 Interval
    - 4 Relay Duration
    - 5 Assigned Relay
    - 6 Relay Logic
- Signal Processing
  - 1 Temperature and Velocity
    - 1 Sound Velocity
      - 2 Process Temperature
      - 3 Temperature Source
      - **4 Fixed Temperature**
      - 5 Sound Veloc at 20 C
  - 2 Echo Select
    - 1 Algorithm
      - 2 Echo Threshold
      - 3 Reform Echo
      - 4 Narrow Echo Filter
      - **5** Submerge Detection
  - 3 Echo Profile
    - 1 Echo Profile
    - 2 Level
    - 3 Distance
    - 4 Near Range
    - 5 Confidence
    - 6 Echo Strength
    - 7 Algorithm
  - 4 TVT Setup
    - 1 Auto Echo Sup Mode
      - 1 Auto Echo Sup Mode
        - 2 Auto Echo Sup Ran...
        - 3 Learn
    - 2 Hover Level
    - 3 Shaper Mode
    - 4 TVT Breakpoints
- Date and Time
  - 1 Daylight Saving
    - 1 Enable
      - 2 Starting Ordinal
    - 3 Starting Day
    - 4 Starting Month
    - 5 Ending Ordinal
    - 6 Ending Day
    - 7 Ending Month

Flow

1 OCM PMD

2 Basic Setup 1 Method of Flow Cal... 2 Flow Exponent 3 Maximum Head 4 Maximum Flow at... 5 Zero Head Offset 6 Flowrate Decimal 7 Flowrate Units 8 User Defined Unit 9 Low Flow Cutoff 3 Primary Measuring... OR 1 <calculation factor> 2 <calculation factor> 3 < calculation factor> 4 <calculation factor> 5 0CM Dimension 1 6 OCM Dimension 2 7 OCM Dimension 3 8 OCM Dimension 4 9 OCM Dimension 5 OCM Dimension 6 **OCM Dimension 7 OCM Dimension 8** OCM Dimension 9 **OCM Dimension 10 OCM Dimension 11 OCM Dimension 12** Totalizers **1 OCM Flow Totalizers** 1 Daily Total High 2 Daily Total Low 3 Running Total High 4 Running Total Low 5 Totalizer Dec. Pos. 6 Totalizer Multiplier 7 Low Flow Cutoff 2 Pumped Volume Totalizer **1** Running Total High 2 Running Total Low 3 Totalizer Dec. Pos. **4** Totalizer Multiplier Local Display 1 Language **5 Maintenance & Diagnostics** 1 Diagnostics 1 Pump Records 1 Set Pumps Runtimes 1 Run Time Relay 2 2 Run Time Relav 3 3 Relay Pump 1 4 Relay Pump 2 **5 Set Pumps Runtimes** 

2 Wear

1 Power-on TIme 2 Power-on Resets 3 Linearization

1 Characteristic 2 Edit Characteristic 3 Temperature

1 Process Temperature

2 Highest Value

3 Lowest Value

4 Reset Min/Max Te...

3 Echo Quality

1 Figure of Merit

2 Confidence

3 Echo Strength

- 4 Noise Average
- 5 Noise Peak

2 Maintenance

1 Transducer Enable

2 Device Remain Life

1 Time Units

2 Lifetime (Expected)

3 Time in Operation

4 Remaining Lifetime

5 Activation of Remi...

6 Lifetime Remind 1

7 Lifetime Remind 2

8 Snooze for 1 year

3 Sensor Remain Life

1 Time Units

2 Lifetime (Expected)

3 Time in Operation

4 Remaining Lifetime

5 Activation of Remi... 6 Sensor Remind 1

7 Sensor Remind 2

8 Sensor Replaced

9 Snooze for 1 year

4 Service Schedule

1 Time Units

2 Service Interval

3 Since Last Service

4 Until Next Service 5 Activation of Remi...

6 Service Remind 1

7 Service Remind 2

8 Service Performed

5 Calibration Schedule

1 Time Units

2 Calibration Interval

3 Since Last Calibrat...

4 Until Next Calibrat...

5 Activation of Remi...

6 Cal. Remind 1

7 Cal. Remind 2.

8 Cal. Performed

#### 6 Communication

- 1 Manufacturer's ID
- 2 Product ID
- **3 Device Revision**
- 4 EDD Revision
- 5 Device ID
- 6 Universal Comman...
- 7 Protocol
- 8 Common Practice....
- 9 Cfg chng count
  - HART Communicati...
    - 1 Polling Address
    - 2 Loop Current Mode
    - 3 Number of Respons...
    - 4 Number of Request...

#### 7 Security

1 Write Protection

#### **8** Characteristics

1 Certificates / Approvals 1 Device Certification

#### **3 Device Diagnostics**

1 Device Status <Device status listing> 2 HW/FW-Status <HW/FW-Status listing> 3 Maintenance **1** Device Lifetime 1 Status 2 Ack Status 3 Ack Warnings 2 Sensor Lifetime 1 Status 2 Ack Status 3 Ack Warnings **3 Service Schedule** 1 Status 2 Ack Status 3 Ack Warnings 4 Calibration Schedule 1 Status 2 Ack Status 3 Ack Warnings 4 Echo Profile 1 Fcho Profile 2 Level 3 Distance 4 Near Range 5 Confidence 6 Echo Strength

7 Algorithm

#### 4 Process Variables

1 Overview 1 Measured Value 2 Analog Out(PV) = 3 Level 4 Space 5 Distance 6 Flow 7 PV Range 8 Loop Current 2 Temperature **1** Process Temperature 2 Highest Value 3 I owest Value **3** Totalizers 1 OCM Flow Totalizers 1 Daily Total High 2 Daily Total Low 3 Running Total High 4 Running Total Low 2 Pumped Volume Totalizer 1 Running Total High 2 Running Total Low 4 Trend View 5 Discrete Inputs and Relays **1 Relay Programmed State** 1 Relay 1 Programmi... 2 Relay 2 Programmi... 3 Relay 3 Programmi... 4 Relay 1 Activated 5 Relay 2 Activated 6 Relay 3 Activated 2 Discrete Input Programmed State 1 DI 1 Programmed 2 DI 2 Programmed 3 DI 1 Scaled State 4 DI 2 Scaled State

#### **5 SITRANS LUT400**

<Device Image>

# Notes

# **Operation via FDT (Field Device Tool)**

## Features

FDT is a standard used in several software packages designed to commission and maintain field devices such as SITRANS LUT400. Two commercially available FDTs are PACTware and Fieldcare.

## Functions

FDT is very similar to PDM (see *Operation via SIMATIC PDM 6 (HART)* on page 5 for more detail).

- To configure a field device via FDT, you need the DTM (Device Type Manager) for the device.
- To configure a field device via SIMATIC PDM, you need the EDD (Electronic Data Description) for the device.

## Device Type Manager (DTM)

A DTM is a type of software that 'plugs into' FDT. It contains the same information as an EDD but an EDD is independent of the operating system.

### SITRANS DTM version 3.1

- SITRANS DTM is an EDDL interpreter developed by Siemens to interpret the EDD for that device.
- To use SITRANS DTM to connect to a device, you must first install SITRANS DTM on your system and then install the instrument EDD written for SITRANS DTM.
- You can download SITRANS DTM from our website at: <u>http://www.siemens.com/sitransdtm</u>. Click on Support then go to Software downloads.

## Electronic Device Description (EDD)

The SITRANS LUT400 HART EDD for SITRANS DTM can be downloaded from the product page of our website.

Go to <u>www.siemens.com/sitransLUT400</u> under **Support** and click on **Software Downloads.** 

## Configuring a new device

The full process to configure a field device via FDT is outlined in an application guide which can be downloaded from the product page of our website. Go to: <a href="http://www.siemens.com/sitransLUT400">www.siemens.com/sitransLUT400</a> under **Support** and click on **Application Guides**.

## Notes

#### For more information

www.siemens.com/level

www.siemens.com/continuous-weighing

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