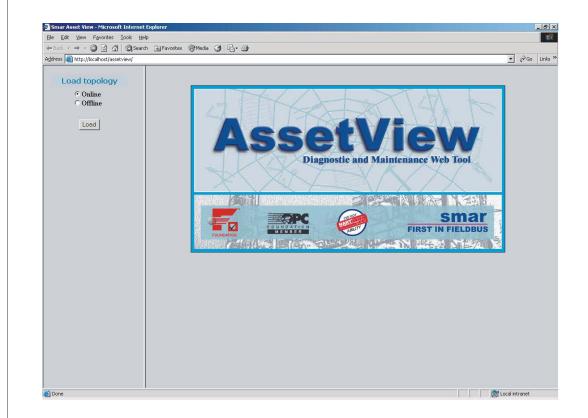
# **SsetView** Z

OCT / 05 AssetView VERSION 3.0

# **INSTALLATION AND OPERATION**

# **USER'S MANUAL**





# smar

#### BRAZIL

Smar Equipamentos Ind. Ltda. Rua Dr. Antonio Furlan Jr., 1028 Sertãozinho SP 14170-480 Tel.: +55 16 3946-3510 Fax: +55 16 3946-3554 e-mail: insales@smar.com.br

#### GERMANY

Smar GmbH Rheingaustrasse 9 55545 Bad Kreuznach Germany Tel: + 49 671-794680 Fax: + 49 671-7946829 e-mail: infoservice@smar.de

#### USA

Smar International Corporation 6001 Stonington Street, Suite 100 Houston, TX 77040 Tel.: +1 713 849-2021 Fax: +1 713 849-2022 e-mail: sales@smar.com

## web: www.smar.com

Specifications and information are subject to change without notice. For the latest updates, please visit the SMAR website above.

#### CHINA

Smar China Corp. 3 Baishiqiao Road, Suite 30233 Beijing 100873, P.R.C. Tel.: +86 10 6849-8643 Fax: +86-10-6894-0898 e-mail: info@smar.com.cn

#### MEXICO

Smar Mexico Cerro de las Campanas #3 desp 119 Col. San Andrés Atenco Tlalnepantla Edo. Del Méx - C.P. 54040 Tel.: +53 78 46 00 al 02 Fax: +53 78 46 03 e-mail: ventas@smar.com

#### **Smar Laboratories Corporation**

6001 Stonington Street, Suite 100 Houston, TX 77040 Tel.: +1 713 849-2021 Fax: +1 713 849-2022 e-mail: sales@smar.com FRANCE Smar France S. A. R. L. 42, rue du Pavé des Gardes

F-92370 Chaville Tel.: +33 1 41 15-0220 Fax: +33 1 41 15-0219 e-mail: smar.am@wanadoo.fr

#### SINGAPORE

Smar Singapore Pte. Ltd. 315 Outram Road #06-07, Tan Boon Liat Building Singapore 169074 Tel.: +65 6324-0182 Fax: +65 6324-0183 e-mail: info@smar.com.sg

#### Smar Research Corporation

4250 Veterans Memorial Hwy. Suite 156 Holbrook , NY 11741 Tel: +1-631-737-3111 Fax: +1-631-737-3892 e-mail: sales@smarresearch.com

#### NETHERLANDS

Smar Nederland De Oude Wereld 116 2408TM Alphen aan den Rijn Tel: +31 172 494 922 Fax: +31 172 479 888 e -mail : info@smarnederland.nl

#### UNITED KINGDOM

Smar UK Ltd 3, Overhill Road - Cirencester Gloucestershire -GL7 2LG Tel: +44 (0)797 0094138 Fax: +44 (0)797 4747502 e-mail: info@smarUK.co.uk

# **INTRODUCTION**

To fulfill the requirements of a control system, the plant needs a system that can provide specific management functions, such as calibration, diagnostics, identification, materials of construction and setup for the *Field Devices*.

Smar **AssetView** is a software system for on-line network enabled asset management. The primary objective is to unleash the powerful diagnostics capabilities found in *Fieldbus* devices in general and particularly in Smar devices, providing several maintenances schemas and making the user interface more friendly.

**AssetView** deals only with devices and is used for the long-term maintenance and device operation. **AssetView** is not restricted to just displaying error messages from the device, but it can take devices through test sequences, record data, plot charts and analyze them providing a much more sophisticated failure analysis.

Another important characteristic of the **AssetView** is the web technology based architecture. The user interface is the Internet Explorer web browser and it can be used on any windows platform.

Since there will always be a mix of instrument brands in a plant, it is important to have a maintenance tool that is independent of the device manufacturer. The same single software must support devices even though these come from different manufacturers.

The device manufacturers know best what information to display, and how to present it for the user to get the best out of their device. The device manufacturer is the ideal candidate to make pages available for their devices, incorporating their knowledge and visualization characteristics, and keeping them up to date with the latest features and capabilities. That's the proposal of **AssetView**: to allow the manufacturers to develop the devices' home pages.

**AssetView** software is network enabled and allows the user to tap into the information of the devices, then tell the user of the condition of any device at any time, so that users can have a complete overview to picture the status of the entire plant.

This product is protected by U.S. patent numbers 6,631,298; 6,725,182 and other U.S. Patents pending.

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# **1.INSTALLATION**

# 1.1 System Requirements

## 1.1.1 Server Station

Operational System	⇒	Windows 2000 Server with Service Pack 4
Processor	⇒	Pentium III
RAM	⇒	512 MB
Free HDD Space	⇒	40 GB
Display	⇒	1024 x 768 - 256 Colors
Internet Information S	Serve	er 5.0 for Windows 2000 Server
Internet Explorer 6.0		

## 1.1.2 Client Station

Internet Explorer 6.0 web browser.

# 1.2 Preparing the Installation

Before installing **AssetView** in the server machine, the user must have already installed a few essential applications that support the Smar software. The user will find these applications in the *SYSTEM302* Installation CD. Follow the instructions below to install these applications.

Before running the AssetView Installation program, execute the following steps:

- Install the Internet Explorer 6.0, located at the Tools\IE6 folder, in the SYSTEM302 CD. Run the EN\le6setup.exe application and follow the instructions in the dialog boxes to complete the installation. It will be necessary to restart the computer after the IE installation.
- Install the Internet Information Server (IIS), version 5.0 for *Windows 2000*. Please refer to the section below for further information.

## 1.2.1 How to install IIS 5.0 on Windows 2000

The IIS is an *Add-on Component* of *Windows 2000*. Place the Windows CD in the CD-ROM drive. Click *Start*, point to *Settings*, click *Control Panel*, and start the *Add/Remove Programs* application:

🖬 Add/Remov	e Programs		- U ×
1	Currently installed programs:	Sort by: Name	•
Change or Remove Programs	🙀 ATI Win2k Display Driver		<b>A</b>
Add New Programs	To change this program or remove it from your computer, click Change/Remove.	<u>C</u> hange/Remove	
Add/Remove Windows Components			
			Y
			jse

Figure 1.1. Adding a new component

Select Add/Remove Windows Components to open the Properties dialog box and then follow the on-screen instructions to install **IIS**. Click Close in the Properties dialog box and then click Finish.

To check that the installation was successful, open a browser window and type the machine name. The *Internet Information Services* page should be loaded.

# 1.3 Installing AssetView

#### IMPORTANT

To install *AssetView*, the user must be logged on as an Administrator or a member of the Administrators group.

Place SYSTEM302 CD installation at the CD-ROM driver. The *Installation* dialog box will open automatically. Click the SYSTEM302 button.

Follow the instructions in the dialog boxes to complete the installation. Do not forget to select the option *AssetView* in the *Component* dialog box:

Component		×
	Select components to be installed.	
	<u>C</u> omponents	
Select	▼ System32	3944 K 🔺
Select	FBView	OK
	Asset View	14348 K
	Block Support	772 K
	DF65Tools	ок 🚽
	1	<b>_</b>
	Description	
-OMPONEL	This component comprises all necessary parts of ProcessView	Change
- mon	parts of Processview	
VIVEAD.		
	Space Required:	221228 K
	Space Available:	2312304 K
	< <u>B</u> ack <u>N</u> ext >	Cancel

Figure 1.2. Installing AssetView

#### IMPORTANT

If a database application is not located during the *AssetView* installation, the MSDE database will be automatically installed.

#### 1.3.1 AssetView Licensing

The Asset Server requires a Hard Key to run properly. Connect the Hard Key to the parallel port or the USB port of the server machine.

The following table shows the license types available:

Number of Devices:	Database Required:
16	MSDE or SQL Server
256	MSDE or SQL Server
No limits	SQL Server

## 1.4 After the Installation

It is necessary to restart the computer after the AssetView installation.

Otherwise, it would be necessary to restart the database. From the *Start* menu, select *Programs* > *Startup* > *Service Manager*. Click *Start/Continue* and check if the icon of the database server appears in the Windows Taskbar.

Check if the *Engineer* group has reading, writing and modifying permissions in the *System302* installation directory:

- 1. Locate the System302 installation directory using Windows Explorer.
- 2. Right-click the *System302* folder icon and select the option **Properties**.
- 3. In the **Properties** dialog box, click the **Security** tab and select the **Engineer** group.
- 4. In the **Permissions** area, mark the **Allow** column for the options **Read**, **Write** and **Modify**. See the example below:

Messenger	Device Support	File Folder
E Microsoft A	mar Properties	?×=older
🗄 🧰 microsoft fr		Folder
🗄 🦲 Microsoft O	General Web Sharing Sharing Security	Folder
- 🗀 Microsoft Sc	Name Add	Folder
🗄 🛄 Microsoft S 👘		Folder
🗄 🛄 Microsoft Vi	Administrators (EDUARDOCORREA\Adm Remove	
🗄 🛄 Microsoft Vi		
🗄 🛄 Microsoft Vi	Engineer (EDUARDOCORREA\Engineer)	ication Ext
🗄 🧰 Microsoft.N	2 Power Users (EDUARDOCORREA\Powe	ap Image
🗄 🧰 mozilla.org	CT SYSTEM	ication Ext
🗄 🧰 MSDN		ication Ext
🗄 🧰 MSN Messei	Permissions: Allow Deny	ication Ext
🕀 🧰 MVB6	Full Control	- Documen
NetMeeting	Modify	ication
🗄 🦲 NotesSQL	Read & Execute	File
Outlook Exp	List Folder Contents	
🗄 🦲 palmOne	Read	
🗄 🛄 PalmSource		
processxp	Write	
🖯 🔂 Smar	Advanced	
🕀 🛄 Assetvi 🕀 🦳 Block Su		
	Allow inheritable permissions from parent to propagate to this action.	
E Device :	object	
	OK Cancel App	de l
E FBTools		
FBView	,	

Figure 1.3. Checking Permissions for the Engineer Group

## 1.4.1 Database Configuration

#### IMPORTANT

To create the *AssetView* database, the user must be logged on as an Administrator or a member of the Administrators group.

It is not necessary to install *System302* and the database on the same machine, because the *AssetServer* can remotely access the database.

NOTE
The SQL Server 2000 can be installed on any computer that communicates with the AssetView server.

Follow the steps described below to configure the database server and the client machine.

#### **Database Server**

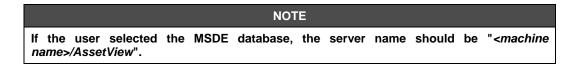
Run this procedure in the machine that hosts the database server to create the AssetView database.

- 1. From the Start menu, select Programs > System302 > AssetView > SqlServer Create Database.
- 2. The following dialog box will open:

🔋 Configure SQL Server Database 🛛 🗙
Notes 1) MAKE SURE THE SERVER EXISTS AND IS WORKING PROPERLY 2) THE SQL SERVER VERSION MUST BE 2000
Select the database server
<u>C</u> reate Close

Figure 1.4. Configuring the SQL Server Database

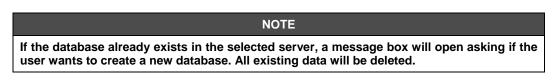
3. Select the database server.



4. Click *Create* and wait a few seconds until the message box opens alerting the user that the database was created. Click *Ok* to close this dialog box:



Figure 1.5. Creating the SQL Server Database



5. Click Close to conclude the database configuration.

#### NOTE

If the database was not created properly, check the SQL Server configuration and the user login information.

#### AssetView Client Database

The database client of *AssetView* is the computer where *System302* and *AssetView* were installed. Run this procedure in each computer where *AssetView* has been installed to configure the database connection.

- 1. From the Start menu, select Programs > System302 > AssetView > AssetView.udl.
- 2. The Data Link Properties dialog box will open.
- 3. Click the Connection tab:
  - 3.1 Select the SQL Server name at the item 1 text box.

3.2 At the item 2 text box, select the "Windows NT Integrated security" mode to log on to the server.

3.3 Select the AssetView Database at item 3. See the following figure:

🖏 Data Link Properties 🛛 🗙
Provider Connection Advanced All
Specify the following to connect to SQL Server data: 1. Select or enter a server name:
ServerName 💌 Refresh
<ol> <li>Enter information to log on to the server:</li> <li>Use Windows NT Integrated security</li> </ol>
O Use a specific user name and password:
User name: sa
Password:
E Blank password E Allow saving password
<ol> <li>Select the database on the server:</li> </ol>
AssetView
O Attach a database file as a database name:
AssetView
Using the filename:
Test Connection
OK Cancel Help

Figure 1.6. Connecting to the SQL Server Database

3.4 Click the Test Connection button and wait for the message confirming the test succeeded:



Figure 1.7. Testing the connection

4. Click Ok in the Data Link Properties dialog box to conclude.

#### 1.4.2 Setting the Engineer Access Level for the Administrator

The access level is configured only by the administrator of the AssetView. The access control of AssetView uses the Windows authentication, and for this reason the AssetView administrator is the administrator of the machine where the System302 was installed.

Click *Start*, point to *Settings*, click *Control Panel*, and start the *Users and Passwords* application. The *Users and Passwords* dialog box will open. Select the *Advanced* tab and click the *Advanced* button at the "*Advanced User Management*" rectangle as the figure below shows:

Users and Passwords
Users Advanced
Certificate Management Use certificates to positively identify yourself, certification authorities and publishers.           New Certificate
Advanced User Management
Local Users and Groups can be used to perform advanced user management tasks.
Secure Boot Settings
Ctri-Alt-Delete before logging on. This ensures password security and helps protect the system from harmful programs.
Require users to press Ctrl-Alt-Delete before logging on.
OK Cancel Apply

Figure 1.8. Managing users

The Local Users and Groups window will open. At the User directory, double-click the user who is the administrator of the machine and will also be the AssetView Administrator, and the Properties dialog box will open. Select the Members Of tab and click Add.

Administrator Properties	<u>?</u> ×
General Member Of Profile	
Member of:	
4 Administrators	
Add	
OK Cancel	pply

Figure 1.9. Adding an user to a new group

Double-click the *Engineer* group, click *Ok* to close both dialog boxes. Then close the *Local Users* and *Groups* window and the *Control Panel* window.

This procedure will configure the *Engineer* access level for the *AssetView* administrator. To configure the access level for the *AssetView* clients, select the *client* user instead of the *administrator* user and then select the access level (*Engineer* or *AssetViewGuest*).

#### NOTE

If AssetView is being used on Windows NT Server, please refer to the Appendix A of this manual for specific information.

# 2.ASSETVIEW SERVER

The *Smar Asset Server* runs transparently to the user. It is responsible for monitoring the devices, controlling the number of devices monitored and granting permissions to users.

Before initializing the Asset Server, it is necessary to:

- Create the device configuration using SYSCON.
- Export the tags.
- Initialize the communication using SYSCON to check if the settings are correct.
- Check if SYSCON's Online Characterization window shows the parameter values.

It is not necessary to keep the SYSCON window open while executing the Asset Server.

## 2.1 Initializing the Server

To open the AssetServer window, click *Start* > *Programs* > *SYSTEM302*, and click the *AssetView Server*.

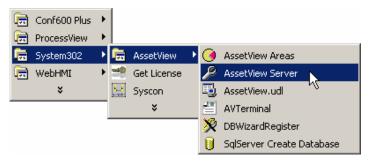


Figure 2.1. Initializing the Asset Server

The following figure shows the Asset Server window:

	Assectiew	Server								
opology	Register	Tracking	Settings	User	View	Window	Help			
a Eveni	t Log	_								_ 🗆 >
	t Log nd Time	Туре				Devid	ce Tag	Block	Hart Tag	Protocol
		Туре				Devid	ce Tag	Block	Hart Tag	
		Туре				Devid	ce Tag	Block	Hart Tag	
		Туре				Devid	ce Tag	Block	Hart Tag	
		Туре				Devid	ce Tag	Block	Hart Tag	Protocol

Figure 2.2. Asset Server interface

# 2.2 Configuring the Communication

To configure the communication interface, go to the *Settings* menu and select *Communication*. The configuration dialog box will open:

Communication Se	ettings 🛛 🗙
Server Id:	
Smar.DfiOleServer.0	
Server Context	
C Inprocess	C Remote
<ul> <li>Local</li> </ul>	C All
	OK Cancel

Figure 2.3. Configuring the Communication Interface

Select the communication server from the list of available servers. Click Ok to conclude.

# 2.3 Selecting the Topology

The *Topology* option allows the user to select the topology configuration to be used by the *AssetServer*.

To read the configuration saved on a Syscon file, go to the *Standard* menu, select *Topology* and click the option *From Syscon Configuration File*:

🔑 Smar AssetView Server									
Topology	Register	Tracking	Settings	User	View	Window	Help		
Upload	from Plant								
From St	yscon Confi	iguration Fi	le						
Exit									

Figure 2.4. Reading the configuration from a Syscon file

The Import Syscon Configuration dialog box will open:

- 1. In the Look in box, select the folder that contains the project file to be opened.
- 2. Click the Syscon project file (.ffp) icon or type its name in the File name box.
- 3. Click Open to conclude this task.

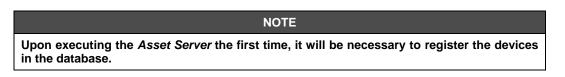
Import Syscon Configu		<u>? ×</u>
Look in: 🤂 🕰	AssetView 🔽 🕂 🖽 🕇	
My Documents My Computer	ataBase lages arme: of type: Projects (* ffp) Dpen as read-only	Open Cancel

Figure 2.5. Selecting the configuration file

The plant configuration will be imported to the AssetServer.

# 2.4 Registering Devices

Register a device implies that the parameter values from this device will be read and stored in the database.



On the Standard menu, click the option Register.

🔑 AssetView Server - Dynamic							
Topology	Register	Tracking	Settings	User			
3							

Figure 2.6. Registering Devices

The *List of Devices* dialog box will open. Select the devices to be registered in the database from the *Unregistered* list and click the *Include* button (>>), or double-click the device name.

To select all devices, click Ctrl+A on the keyboard.

The devices will be placed in the Selected list.

Unregistered	Protocol			lected	Protoc	ol
🗑 pic-206			8	fy-303	FF	
🗑 pic-207	FF					
👰 pic-250	FF					
🞯 pt-402 🞯 TAG DEFA	FF	>>				
4						
legister Device Det						<u> </u>
Device is ready to b						
Number of Device	\$					
Uploaded: Unregistered: Registered:	-	oRegister: ( Permitted : (			ОК Неір	

Figure 2.7. Devices List

IMPORTANT	
For Smar's Fieldbus devices, it is recommended to use the firmware verse parameters and methods may not be available for devices with other firm. The <i>List of Devices</i> dialog box indicates the functionalities missing in the substant list of Devices	nware versions.
Isit of Devices         Unregistered       Protocol         Protocol       Protocol         Protocol	
	-

**NOTE** AssetView can monitor the HART devices through Smar's HI302 - HART/Foundation Fieldbus Interface. It is necessary to update the firmware version to 0301 (3.15 or higher) and create the blocks configuration for the HI302. Please refer to the *HI302 User's Manual* (Chapter 3) for further information. The current AssetView version supports the FY301, LD301, TT301 and DT301.

Others HART devices will use a generic page, as well as the devices from other manufacturers.

The DBWizard Register application cannot register templates of HART devices.

If the user doesn't want to register a device, select the device at the *Selected* list and click the *Exclude* button (<<) or double-click the device name. The devices will be placed in the *Unregistered* list.

List of Devices			_ 🗆 ×
Unregistered     Protocol       Image: pic-206     FF       Image: pic-207     FF       Image: pic-250     FF       Image: pic-250 <td>&gt;&gt;&gt; &lt;&lt; br/&gt; </td> <td>Selected</td> <td>FF</td>	>>> << br/>	Selected	FF
	To Register: 0		
Unregistered: 6 Registered: 0	Permitted : 0	He	lp

Figure 2.8. Removing a device from the Selected list

If a device selected to be registered doesn't have all blocks required or has an old firmware revision, the device will be registered in the database but some functionalities, such as calibration and diagnostic methods, may not be available.

Click *Ok* to start registering the devices. The following dialog box will appear while the devices are being registered:

egister -	Fieldbus Networ	k		×	
	Registering d	levice: fy-30	3		
	1 0	f 3		]	
	Abort	<u>S</u> kip			
Block		Parameter			
TRD	CI	URVE_Y[6]			
TRD	CI	URVE_Y[7]			
TRD	CI	URVE_Y[8]			
TRD		URVE_Y[9]			
TRD	MA	AIN_LATCH			
TRD	ORD	ERING_CO	DE		
TRD		PRESS_IN			
TRD SENSOR_PRESS_IN_LO_LIM					
TRD					
TRD		.VE_MAN_I			
TRD		_MODEL_M	IUM		
TRD	V	ALVE_SN			

Figure 2.9. Registering devices

The procedure to register the devices has a time limit variable (*REGISTERTIMEOUT*) and its default value is 300 seconds. This value can be edited in the "*SmarAssetView.ini*" file, located in the *AssetView.ini*" file, lo

# 2.5 Tracking

The *Tracking* option initializes the monitoring of the devices registered in the database, storing the changes of the parameter values in the historical information.

		NOTI				
To monitor HART OLEServers, in t application double taskbar, to open the	he Sys <i>tem3</i> -clicking its	02 installation icon. Click th	directory,	run the	Serverl	Manager.exe
🐻 Smar	- ServerManager				_ 🗆 🗙	
View Op	tions About Exit					
Smar OLE		ame	Data			
E- Super		MULATION ORCE ID VALIDATION	OFF ON			
		PCDABASE_DELAY	0			
		INC_OPER_TO_DEV	OFF 30			
For Help, p	oress F1			NL	IM ///	
Double-click the pa	rameter SINC	_OPER_TO_DE	V and selec	t the value	ON.	
	Supervision SINC_OP	ER_TO_DEV		OK ancel		
Click Ok and restar	t the server.					

On the Standard menu, click the option Tracking:

🔑 AssetView Server - Dynamic							
Topology	Topology Register Tracking Settings User						
		5					

Figure 2.10. Tracking devices

AssetServer starts monitoring the information from the Fieldbus network. The following messages will appear during the initialization:

Trackin	g
Conne	cting to OPC Server
	Tracking
	Getting list of field devices
-	Tracking
	Tracking in progress

Figure 2.11. Initializing Tracking

The devices that will be monitored must be registered in the database and be online on the Fieldbus network.

Tracking			
ACY_pic-100	🗑 FI-215	@ FY-302-1	🗑 ktek
📷 LD 302-1	—	—	 (i) pic-222
pic-223	TAG DEFAULT 253		TT 302-1
TT301-6	TT301-5	🗑 TT 301-4	🗑 FY301-6
FY301-5			
-			
Tracking finished s	uccessfully. All devid	ces are alive.	

Figure 2.12. Tracking results

The Tracking dialog box displays the information about the devices being monitored.

If a device is displayed in the *Tracking* dialog box with a red X on its icon, it means that the device is not being monitored because of a failure in communication. A typical example of a failure in communication occurs when the device goes offline and returns to online mode after a short period of time.

The system automatically detects when the instrument starts communicating again. The monitoring process is restarted and the device icon in the *Tracking* dialog box is restored to its normal state.

# NOTE To stop tracking the devices, it is necessary to close the *Asset Server*: in the *Topology* menu, click *Exit*.

# 2.6 Managing devices in the database

The user can check the list of devices registered in the database or remove a device register from the database.

On the Standard menu, click the option View, point to Devices, and then click List.

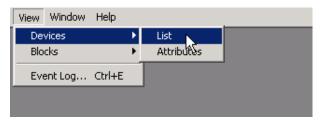


Figure 2.13. Opening the Device List

Devices X ٠ Device Tag DeviceID 町日本の空間の幕 Y302:034802688 👺 ty-303 0003020006:SMAR-F 0003020001:SMAR-L D302:000804507 🗑 LD\_C\_Sharope D302:000807110 pic201 0003020001:SMAR-L : : 1.01 1.11 1. Protocol: N≗D )evices: Registered Being Tracked Remo Close

The Devices List dialog box will open:

Figure 2.14. Device List

The devices displayed in this dialog box are registered in the database. The *Tracking* procedure obtains these devices by reading the information from the database and from the Fieldbus Network. (See the section *Tracking* for further information about monitoring a device)

In this dialog box, it is possible to apply a filter in the *Devices List*. At the bottom of the dialog box, select the option:

- *Registered*: displays the devices that are registered in the database but not necessarily being monitored.
- *Being Tracked*: displays the devices that are registered in the database and that are being monitored by the *AssetServer*.

The user can manage the devices while they are removed or added to the database, according to the number of devices that his *License* allows being included in the topology.

# 2.7 Device Attributes

To display the device's attributes, *Asset Server* must be monitoring the devices, by clicking the option *Tracking* in the main menu.

On the View menu, select the option Devices and click Attributes:

View Window Help			
Devices	×	List	
Blocks	⊁	Attributes	
Event Log Ctrl+E			

Figure 2.15. Opening the Device Attributes

The Device Attributes dialog box will open:

Device Attribu	ites 🔀
Device Id :	0003020006:SMAR-FY302:800521
Device Tag :	fcv-100
Manufacturer :	SMAR
Device Type :	FY'302
Device Rev. :	04 DD Rev. : 02 CF Rev. : 01
	OK Help

Figure 2.16. Device Attributes

Select a *Device ID* or the *Device tag* from the list. This dialog box will display the information about the device selected, such as the *Manufacturer*, the *Device Type* and *Revision*, *DD Revision* and *CF Revision*.

# 2.8 Removing a Device from the Database

To remove a device from the database, open the *Device List* clicking the *View* menu and selecting *Devices > List*.

Select the device icon and click Remove.

Devices			×
Device Tag	DeviceID		
		III (C: {->4,83	1-100
Y'302:034802688	👺 ty-303	000302000	06:SMAR-F
D302:00080450	🗑 LD_C_Sharope	000302000	01:SMAR-L
D302:000807 10 L	() pic201	000302000	01:SMAR-L
: :	<b>9</b>	: :	1
	<u>.</u>		11 A.
· · · · · · ·	Que de la	1 i.,	LC LC
		1.104	8 19. 
)evices:	Protocol:		NºE
ve · Close ·	<ul> <li>C Registered</li> <li>● Being Tracked</li> </ul>	t	Remo

Figure 2.17. Removing a device from the database

The user can also activate the device popup menu by right-clicking its icon. Click the item Remove:

Devices	×
Device Tag	DeviceID
🗑 fov-100	0003020006:SMAR-FY302:800521
👰 fy-303	0003020006:SMAR-FY302:034802688
🗑 LD_C_Sharope 🍌	0003020001:SMAR-LD302:000804507
pica Remove	0003020001:SMAR-LD302:000807110
🚱 pic-203	0003020001:SMAR-LD302:000807081
😨 pic-207	0003020001:SMAR-LD302:800524
😨 pic-208	0003020001:SMAR-LD302:801021
😨 pic-209	0003020001:SMAR-LD302:000801685
253 · 040	
Protocol: FIELDBU	JS Nº Devices: 16
<ul> <li>Registered</li> <li>Being Tracked</li> </ul>	Barrana
	Remove Close

Figure 2.18. Removing a device from the database

A message box is displayed for the user to confirm the operation. Click Yes to remove the device from the database.

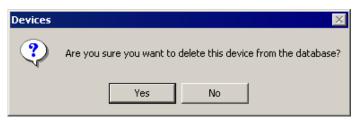


Figure 2.19. Confirming the operation

## 2.9 Block Attributes

To display the list of blocks, *Asset Server* must be monitoring the devices, by clicking the option *Tracking* in the main menu.

On the View menu, select the option Blocks and click Attributes:

View W	'indow H	elp	
Device	es	•	
Blocks		•	Attributes
Event	Log Ct	rl+E	

Figure 2.20. Opening the Block Attributes

The Block Attributes dialog box will open:

Block Attributes
Device Tag : fy-303
BlockTag:
fy-303-res fy-303-res fy-303-rd fy-303-diag fy-303-ao
Device Type : FY302
Device Rev. : 04 DD Rev. : 02 CF Rev. : 01
OK Help

Figure 2.21. Block Attributes

Select the *Device tag* from the list. This dialog box will display all of the blocks configured for the selected device and the information about the device, such as the *Manufacturer*, the *Device Type* and *Revision*, *DD Revision* and *CF Revision*.

# 2.10 Event Log

The user can display the log file with the events executed in the Asset Server.

On the View menu, select the option Event Log:

View	Window	Help		
De	vices		۲	
Blo	cks		×	
Eve	ent Log	Ctrl+E		
	n	v		

Figure 2.22. Opening the Event Log window

The Event Log window will appear at the bottom of the AssetServer window.

Event Log				_ 🗆 >
Date and Time Type	Device Tag	Block	Hart Tag	Protocol
5/3/2004 - 7:19:38 PM Device found	pic-207			FIELDBUS
5/3/2004 - 7:19:45 PM Starting tracking				
5/3/2004 - 7:19:48 PM Device found	fy-303			FIELDBU
5/3/2004 - 7:19:48 PM Device found	pic-206			FIELDBU
5/3/2004 - 7:19:48 PM Device found	pt-402			FIELDBU
5/3/2004 - 7:19:48 PM Device found	pic-250			FIELDBU
5/3/2004 - 7:19:48 PM Device found	TAG DEFAULT 12	!		FIELDBU
	1.007			DEL DOLL

Figure 2.23. Event Log window

# 2.11 User Management

The Administrator must grant permissions for other users to access the Asset Server.

On the Standard menu, select the option User.

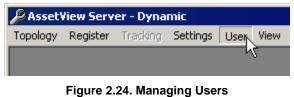


Figure 2.24. Managing C

The Users dialog box will open:

Users				×
Group	Engine	er	 	 •
User Nam juliana	9	Email	 	
IUSR_JUL Everyone	IANA			
Add		Edit	Delete	Close

Figure 2.25. Users dialog box

## 2.11.1 Adding Users

Click the Add button to add a new user. The Add Users dialog box will open:

- 1. Type the user name.
- 2. Type a brief description for the user.
- 3. Type the user's full name.
- 4. Choose a password for the user.
- 5. Select the group to which the user will be added.
- 6. Type the user's e-mail.
- 7. Click Ok.

Add User	×
Username	
Description	
Full Name	
Password	
Group	
E-mail	
	OK Cancel

Figure 2.26. Adding Users

Users that are added to the *Engineers Group* will have permission for writing and reading information from the server. Users that are added to the *AssetViewGuest Group* will have permission only to read information from the server.

### 2.11.2 Editing User's Attributes

Click the *Edit* button to change the information about a user.

Only the *e-mail* text box will be enabled for edition.

#### 2.11.3 Removing a User

To remove a user, click the Delete button.

A message box will appear confirming the operation. Click Yes to remove the user.

# 2.12 Configuring the Mail Service

To configure the e-mail server, go to the Settings menu and select the option Mail:

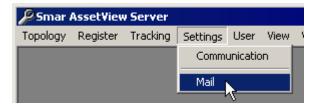


Figure 2.27. Configuring the E-Mail Service

The Mail dialog box will open:

Mail Options
Smtp Server Smtp Port 25 TimeOut (ms) 100 Use Authenticate Mode? No 💌
AssetView Email Account
OK Cancel

Figure 2.28. E-mail options

- 1. Type a name or the IP address of the e-mail server in the SMTP Server text box.
- 2. Configure the maximum idle time, in milliseconds, for the communication with the e-mail server in the *TimeOut* text box. It is recommended to use a value 10 times bigger than the server's response time.
- 3. If the e-mail server requires authentication, select Yes in the Use Authenticate Mode box and type the password for the e-mail address in AssetView.
- 4. Configure the e-mail account for AssetView.
- 5. Click *Ok* to save the changes and close this dialog box.

# **3.ASSETVIEW AREAS**

For many reasons, a big plant is usually divided into several areas. From the *AssetView* point of view, each area is represented by one particular *AssetServer*, which will be in charge of registering all devices and keeping track of them.

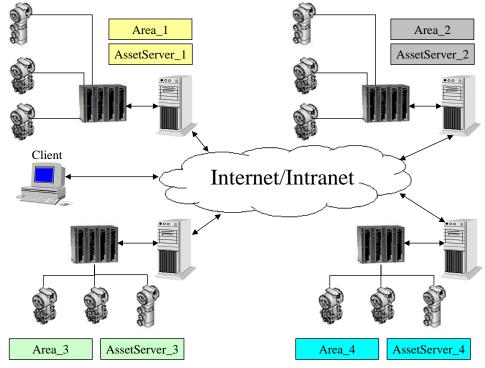


Figure 3.1. Managing different areas

AssetView provides a Web page with links to all these areas, so the user can easily navigate through these areas just by clicking a link. This Web page can be opened from any of the *AssetServer* machines as well as any other client computer (intranet/internet) that has a browser installed. To achieve this functionality, follow the steps below to configure the *AssetView* areas.

To open the AssetView Areas window, go to the Start menu, select Programs > System302 > AssetView > AssetView Areas as indicated below:

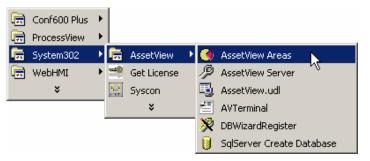


Figure 3.2. Initializing the AssetView Areas

The AssetView Areas window will open:

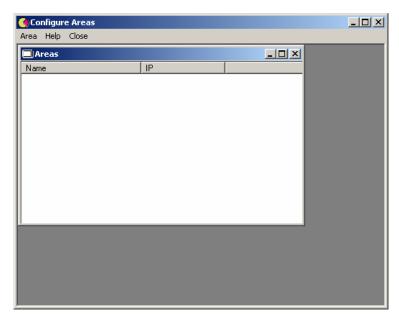


Figure 3.3. Configuring Areas

# 3.1 Adding Areas

- 1. On the Main menu, select Area and click Add. The Add Area dialog box will open:
  - 1.1 At the Area Name text box, type the name that better describes the purpose of the area.
  - 1.2 At the Asset Server IP address text box, type the IP address or the network machine name where the devices of this area have been registered.
  - 1.3 Click the Add button.

Add Area			×
Area Name: AssetServer IF	<sup>p</sup> address:		
		Add	Close

#### Figure 3.4. Adding Areas

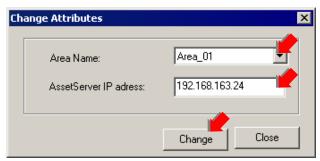
- 1.4 Repeat steps 1.1 to 1.3 to add other areas from the Plant. Click the *Close* button when all of the areas have been added to the configuration.
- 2. On the *Main* menu, select *Area* and click *Save*. The area configuration will be saved and the list of existing areas is stored in the database. The list of areas will be displayed to the user anytime the *AssetView Areas* application is executed.

rea Help Close		
Areas		
Name	IP	
\rea_1	192.168.163.23	
Area_2	192.168.163.24	
\rea_3	192.168.163.25	

Figure 3.5. List of Areas

# 3.2 Changing Areas Attributes

- 1. On the *Main* menu, select *Area* and click *Change Attributes*. The *Change Attributes* dialog box will open:
  - a. At the Area Name text box, select the name of the area to be changed.
  - b. At the Asset Server IP address text box, type the new IP address or the network machine name where the devices of this area have been registered.
  - c. Click the Change button.



#### Figure 3.6. Changing Areas Attributes

- 2. Repeat steps *a* to *c* to change other areas attributes. Click the *Close* button to conclude.
- 3. On the *Main* menu, select *Area* and click *Save*. The new area configuration will be saved and the list of existing areas is stored in the database.

# 3.3 Removing Areas

- 1. On the *Main* menu, select *Area* and click *Remove*. The *Remove Area* dialog box will open:
  - a. At the Area Name text box, select the name of the area to be removed.
  - b. Click the *Remove* button.

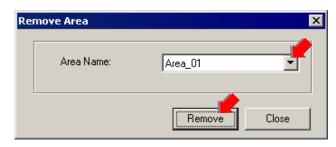


Figure 3.7. Removing Areas

- 2. Repeat steps **a** to **b** to remove other areas from the Plant. Click the *Close* button to conclude.
- 3. On the *Main* menu, select *Area* and click *Save*. The new area configuration will be saved and the list of existing areas is stored in the database.

# 3.4 Opening the Areas Topology

1. Open the Web Browser and type the *Areas* page address:

http://<server address>/assetview/area.htm

IMPORTANT

The Areas page must be opened in the browser using the server address (name of the server machine) where the areas were configured with the *AssetView Areas*, as in the figure above.

2. Click the expansion sign next to the plant icon to expand the tree and see the links to the areas:

+ Back • → - ③ ③ ④ ④ Sea Agdress ● http://locahost/assetview/are	jelo ndr ⊡Favoritos: @Media (3) (2) + (3) 107 + [0] > here	UN S
	Asset View.	
A r	Plant Area_1 Area_2 Area_4	
e a		
S		
	Smar FIRST IN FIELDBUS	

Figure 3.8. Areas topology

3. Clicking a link to an area will open *AssetView* from the respective computer, identified by the IP address configured previously by the *AssetView Areas* application. The *Authentication* dialog box will open to validate the user.

Enter Network Password			
<b>@</b>	Please type yo		
₿ °	Site:	192.168.163.23	
	<u>U</u> ser Name		
	<u>P</u> assword		
	<u>D</u> omain		
	$\square$ Save this p	assword in your password list	
		OK Ca	ncel

Figure 3.9. User Authentication

4. Once the user name and the password are correct the *AssetView* topology will open on the browser as illustrated below:

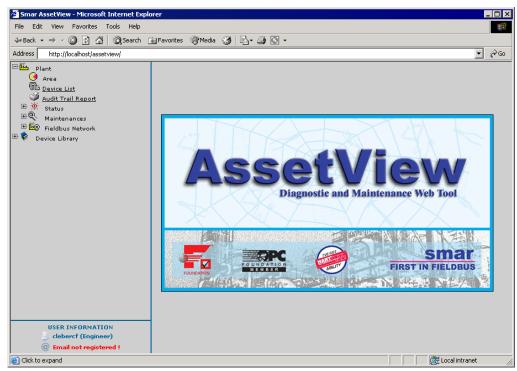


Figure 3.10. Loading the topology

# **4.ASSETVIEW**

## 4.1 Loading the Configuration

To start AssetView, open the Internet Explorer and type:

```
http://machine name/assetview (local or remote access)
    or
http://localhost/assetview (local access)
    or
http://machine IP_number/assetview (local or remote access)
```

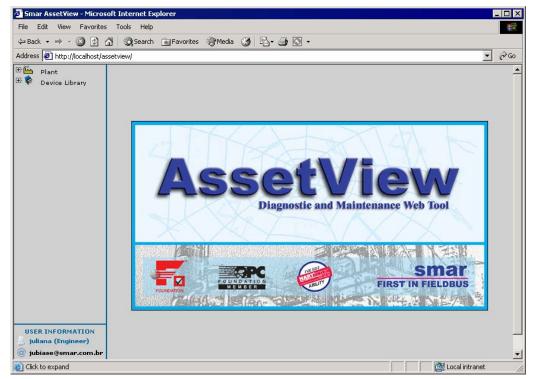


Figure 4.1. AssetView Home Page

AssetView uploads the network topology from the SYSTEM302 servers. The user can browse to the operational devices at the different plant locations from AssetView.

Once the topology is uploaded from the network, the frame on the left side of the browser window will display the plant topology. Click the expansion sign to expand the *Fieldbus Network* and its segments.

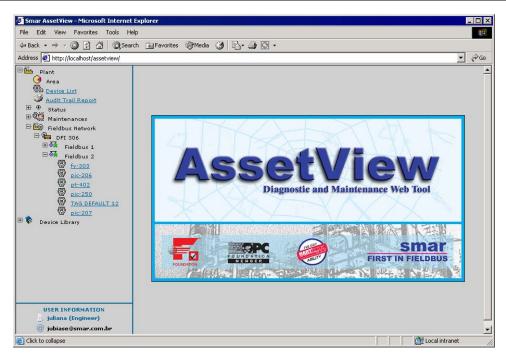


Figure 4.2. Browsing the Topology

## 4.2 Opening the Device Home Page

Each device type has a standard home page layout. Every device in a plant location has a "home page" from where the user can proceed with the calibration, configuration, identification, diagnostics or reconciliation of the device configuration.

Navigating through the topology tree, click on any device icon to display its home page. The figure below shows the home page of the *FY302* with the tag name FCV-100:

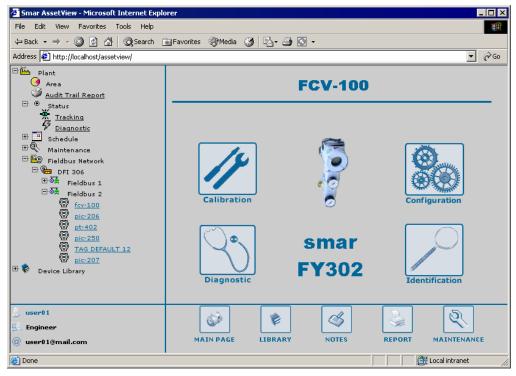


Figure 4.3. Device Home Page

For each device type, the main page will have the links:

#### 4.2.1 Identification

The *Identification* page provides all the information relevant to maintenance of the device, such as its manufacturer, *Device* type, tag, serial number, and its versions. Materials of construction for wetted parts are also indicated.

#### 4.2.2 Configuration

In the Configuration page the user can read and write the parameter values of the devices.

#### 4.2.3 Calibration

Calibration is the correction of sensor reading and physical outputs. During this process messages are displayed to the user indicating the status of this condition. There are specific calibration methods for each device based on scripts defined by the manufacturers.

#### 4.2.4 Diagnostics

Simple diagnostics are displayed to the user. Comprehensive tests can be done from time to time using several charts to check the condition of the field device. Because of the diagnostic it is possible to first remotely check the device if there really is a failure before going into the field. And yet because of the detailed information about the Network and device operation provided by the diagnostics, the user knows exactly where the problem is.

#### 4.2.5 Reconciliation

Reconciliation allows comparison of current device settings with past configurations stored in the database.

On the right side of the screen, it is possible to see the changes made previously selected by the user. On the left side, the user can see the changes made on the same items displayed on the right side, but from the moment of the last change executed in the device. The last change is called "Current Device Parameterization".

*Parameterization* means the action of changing the values of the parameters. The parameters are the variables of the device.

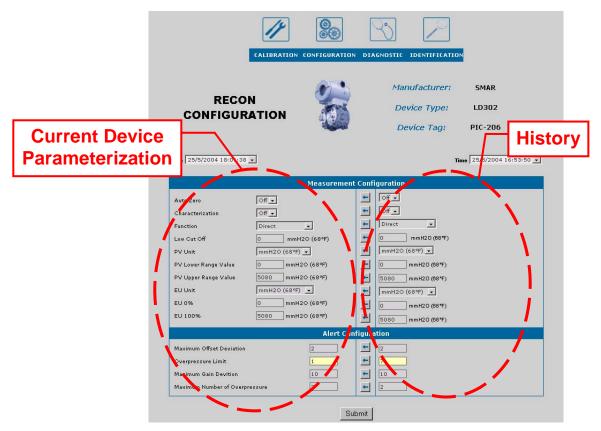


Figure 4.4. Reconciliation Page

If a moment different from the *Current Device Parameterization* is displayed on the left side and any previous moment is displayed on the right side, the user will only be able to compare the configurations. The arrows will be disabled and it will not be possible to transfer values.

If the *Current Device Parameterization* is displayed on the left side and any previous moment is displayed on the right side, the user can transfer the values from the previous moment to the device, clicking on the respective arrows. Click *Submit* to apply the values to the device.

### 4.3 Integrating Devices

#### 4.3.1 Fieldbus Devices

Use the *DBWizard Register* application to integrate Smar or third-party devices that were not installed in the *Device Support* folder, in the installation directory "Program Files\Smar\Assetview\Web Pages\".

Click the *Start* menu, point to *Programs* > *System302* > *AssetView* and click the *DBWizardRegister* application:



Figure 4.5. Starting the DBWizard Register Application



The DB Wizard Register window will open. On the Standard menu, select the option Register and click Database:

Figure 4.6. Registering the Database

The Register Database dialog box will open.

🔀 Register Database	×
🔲 Floppy Disk	
Protocol:	
	Device Revision:
Manufacturer:	DD Revision:
<u> </u>	CF Revision:
Device Type:	
	WEB Pages Files
	1
1	
	<u>R</u> egistry Database

Figure 4.7. Register Database Dialog Box

Follow these steps to register a device:

- 1. Select the protocol from the *Protocol* list box.
- 2. Select the device manufacturer from the *Manufacturer* list box.
- 3. The list of devices will be displayed in the *Device Type* box. Click the target device to select it.
- 4. Select the revision of the selected device in the Device Revision list box.
- 5. Select the revision of the Device Description in the DD Revision list box.
- 6. Select the revision of the Capability File in the CF Revision list box.
- 7. Click Registry Database.

If the selected device doesn't exist in the database, the following message will open:



Figure 4.8. Creating the Device Template

Click Yes to create the device template in the database.

The Search in Capabilities Files dialog box will open.

🎘 Search in Capal	bility Files	×
Transducer Block	Profile:   Profile Revision:	٩
Resource Block	Profile: Profile Revision:	٩
Function Block	Profile: Profile Revision:	9
Diagnostic Transdu	icer Block Profile: Profile Revision:	٩
	<u>0</u> K	

Figure 4.9. Configuring the Device

Type the *Profile* and *Profile Revision* numbers for the blocks. Observe that the numbers must be in the Hexadecimal format.

#### HINT

Open the *Capability File* (\*.*cff*) of the device to locate the *Profile* and *Profile Revision* numbers.

Or use SYSCON to read the *Profile* and *Profile Revision* numbers, opening the *Block List* dialog box of the device. Please refer to the software manual for details.

After typing the numbers, click the button  $\square$  to validate them.

If the numbers do not match the *Profile* and *Profile Revision* in the *CFF* file, the button *X* will be displayed.

Search in Capat	oility Files	2
Transducer Block -	Profile:	
	0x8020	_
trd	Profile Revision:	
	0x0102	
Resource Block		
	Profile:	
res	0x8020	
1	Profile Revision: 0x0103	🔼
Function Block		
	Profile:	
C Analog Input	1	
C Analog Output	Profile Revision:	_ 🗳
DiagTransducer Blo		
	Profile:	_
diagtrd	Profile Revision:	
	οκ	
	ŪK	

Figure 4.10. Checking the Information

Once all *Profile and Profile Revision* numbers are correct, the button *states* is displayed.

IMPORTANT
The <i>Profile</i> and <i>Profile Revision</i> numbers of the <i>Resource</i> block and <i>Analog Input</i> (or <i>Analog Output block</i> ) are required to register the device, because the parameters of these blocks are read by the device's generic pages.

Click *Ok* to register the device. If the template allows multiple instances of the *Transducer* block, the message below will open so the user can select the number of instances for the block.

DB Wizard	×
The template that is being created can have multiple instances (3) of the transducer block.	ОК
How many instances would you like to create ?	Cancel
0	

Figure 4.11. Selecting the Transducer Block Instances

After registering the template, the *Wizard* will verify if the pages were created for this type of device. See the message below:



Figure 4.12. Selecting the Transducer Block Instances

Click Yes to copy the generic pages from the directory "Program Files\Smar\Assetview\Web Pages\FF Generic" to the device folder. The user can customize these pages by editing the files located in the corresponding folder in the *Device Support* directory. See the example below:

0004				
File Edit View Favorites Tools Help				2
🗘 Back 🔹 🤿 👻 🛐 🛛 🖓 Search 🛛 🎦 Folders	3	略 N × 20 囲+		
olders	×	Name 🛆	Size	Туре
🗄 👘 Smar		images		File Folder
🖻 🧰 Assetview	_	🖭 0101.xml	287 KB	XML Document
i in		🔮 0102.xml	287 KB	XML Document
SQLServer Support		🔮 0103.xml	286 KB	XML Document
🖃 🧰 Web Pages		🔮 0201.xml	365 KB	XML Document
💼 CSS		🗐 0301.xml	365 KB	XML Document
🕀 🧰 CustomErrors		🔮 0302.xml	411 KB	XML Document
🖻 🧰 Device Support		🔮 0401.xml	411 KB	XML Document
± 📄 000101		🔮 0402.xml	411 KB	XML Document
Ē- <b>1</b> 000302		040201Calibration.asp	33 KB	Documento do Activ
Ē. 🚞 0001		3040201Calibration.csv	1 KB	Arquivo CSV do Micr
Ē∵ <mark>`</mark> ם 0002		040201Calibration_Lower_1.asp	2 KB	Documento do Activ
⊡ 0003		040201Calibration_Lower_2.asp	3 KB	Documento do Activ
⊕ <del>(</del> ] 0004		040201Calibration_Lower_3.asp	5 KB	Documento do Activ
⊞ <u>)</u> 0005		040201Calibration_Lower_4.asp	4 KB	Documento do Activ
⊡ 0006		040201Calibration_Lower_end.asp	2 KB	Documento do Activ
b000 🧰 💼		040201Calibration_Lower_error.asp	2 KB	Documento do Activ
🕀 🧰 0010		🙋 040201 Calibration_main.htm	1 KB	HTML Document
		040201Calibration_Temperature_1.asp	2 KB	Documento do Activ
		040201Calibration_Temperature_2.asp	6 KB	Documento do Activ
0017		040201Calibration_Temperature_3.asp	4 KB	Documento do Activ
🗄 🕮 Common		040201Calibration_Temperature_end.asp	1 KB	Documento do Activ
🕀 🧰 DeviceLibrary		040201Calibration_Temperature_error.asp	2 KB	Documento do Activ
🕀 🧰 DeviceList		040201Calibration_Upper_1.asp	2 KB	Documento do Activ
🕀 🧰 FF Generic		040201Calibration_Upper_2.asp	3 KB	Documento do Activ
🕀 🧰 Hart Device Support		040201Calibration_Upper_3.asp	5 KB	Documento do Activ
🕀 🧰 images		040201Calibration_Upper_4.asp	4 KB	Documento do Activ
🗄 🧰 Maintenance	-	<b>I</b>		•

Figure 4.13. Editing the Device Pages

#### 4.3.2 HART Devices

The *DBWizard Register* application cannot be used to register HART instruments. *AssetView* monitors HART instruments using the Smar's HI302 (HART/Foundation Fieldbus Interface).

It is necessary to create the blocks configuration for the HI302 to represent the HART instruments installed in the plant. Please refer to the **HI302 User's Manual** (Chapter 3) for further information.

When registering a HART instrument using the *Asset Server*, that hasn't been registered in the database, the message below will open alerting the user that the device will be registered as a generic instrument:

List of Devices				_	
Unregistered UD302_2_4_927 UD302_3_2_469 UD302_3_8_469 UD302_3_8_469 UD302_4_1_693	FF FF FF	Smar Asset Serve	Selected	Protocol	×
Pic-100     Pic-100     Pic-206     Pic-207     Pic-207     Pic-207     Pic-250     Pic-402     TAG DEFAUL	FF FF FF FF			registered as ha	rt generic. Continue anyway?
	FF HART HART HART		4	<b>)</b>	J
Device is ready to be					
Uploaded: Unregistered Registered:		Register: -1 mitted : 0		OK Help	

Figure 4.14. Registering a Generic Device

HART instruments from Smar or other manufacturers that don't have registered pages will use the generic pages located in the folder "Web Pages\Hart Device Support\GenericHart", inside the AssetView installation folder.

Observe the figure below:

File Edit View Favorites Tools Help					
🕁 Back 🔹 🤿 👻 🛐 🥘 Search 🛛 🔁 Folders	3	≧¶ X Ω   Ⅲ•			
olders	×	Name 🔺	Size	Туре	
🖻 🧰 Smar	-	images		File Folder	
🗄 🧰 Assetview		igenericCalibration.asp	20 KB	Documento do Active Server	
- 🗀 bin		SgenericCalibration.csv	1 KB	Arquivo CSV do Microsoft Excel	
- SOLServer Support		genericCalibration_loop_current_1.asp	2 KB	Documento do Active Server	
🖃 🧰 Web Pages		genericCalibration_loop_current_2.asp	5 KB	Documento do Active Server	
		genericCalibration_loop_current_3.asp	3 KB	Documento do Active Server	
CustomErrors		@genericCalibration_loop_current_end.asp	1 KB	Documento do Active Server	
🗄 🦲 Device Support		genericCalibration_loop_current_error.asp	2 KB	Documento do Active Server	
🗄 🦲 DeviceLibrary		genericCalibration_main.htm	1 KB	HTML Document	
🕀 🧰 DeviceList		genericCalibration_variable_lower_range_end.asp	1 KB	Documento do Active Server	
E 📄 FF Generic		genericCalibration_variable_lower_range_error.asp	2 KB	Documento do Active Server	
🖃 🧰 Hart Device Support		@genericCalibration_variable_lower_range1.asp	2 KB	Documento do Active Server	
		genericCalibration_variable_lower_range2.asp	3 KB	Documento do Active Server	
🗄 🧰 Common		@genericCalibration_variable_lower_range3.asp	9 KB	Documento do Active Server	
🗉 🔄 GenericHart		@genericCalibration_variable_lower_range4.asp	7 KB	Documento do Active Server	
ter images		genericCalibration_variable_range_end.asp	1 KB	Documento do Active Server	
🗄 🧰 Maintenance		genericCalibration_variable_range_error.asp	2 KB	Documento do Active Server	
🕀 🧰 Report		genericCalibration_variable_range1.asp	2 KB	Documento do Active Server	
Track-Diag		genericCalibration_variable_range2.asp	3 KB	Documento do Active Server	
🕀 🧰 Block Support		genericCalibration_variable_range3.asp	8 KB	Documento do Active Server	
E Common		genericCalibration_variable_range4.asp	7 KB	Documento do Active Server	
Common_old		genericCalibration_variable_range5.asp	9 KB	Documento do Active Server	
Common_old2		genericCalibration_variable_range6.asp	7 KB	Documento do Active Server	
🕀 🧰 Conf600 Plus		Configuration acn	19.VR	Documento do Active Server	

Figure 4.15. Generic Pages for HART Instruments

# **5.DEVICE LIST**

Click the link Device List to open a page with the list of all devices registered in the database:

ile Edit View Favorites Too					
⊨Back • ⇒ • 🙆 😰 🚮 🤅		Media 🧭 🖏 🍜 🙆 🕶			
ddress 🙋 http://localhost/assetvie	w/				- (
Plant		AssetView Device	List		
C <u>Device List</u>			_		
	Tag	Search:	Search	🗌 One Page	
E Maintenances					
Alarms		SUMMARY			
💏 <u>Search</u> © E <u>List</u>		<b>9</b> 6 <b>9</b> 0 90	🖉 (3) 🔍		
		Y(5) Y(0) Y(0) X	27 (3)	(1)	
History	TAC	TD	TRACKTUC	DIACHOCTIC	MATHITEMANICE
History Fieldbus Network	TAG	Ш	TRACKING	<u>DIAGNOSTIC</u>	MAINTENANCE
History Fieldbus Network	<u>TAG</u> LD02_306	ID 0003020001:SMAR-LD302:000807076			
History Fieldbus Network					
History Fieldbus Network	LD02 306	0003020001:SMAR-LD302:000807076	0	Ø	ą.
History Fieldbus Network	<u>LD02 306</u> TT01 306	0003020001:SMAR-LD302:000807076 0003020002:SMAR-TT302:000804679	0	Ø	Q. Qii
History Fieldbus Network	LD02 306 TT01 306 IF302 1 4 399	0003020001:SMAR-LD302:000807076 0003020002:SMAR-TT302:000804679 0003020003:SMAR-IF302:004803599	0 0 0	2 0 2 2	Q Q Q
History Fieldbus Network	LD02 306 TT01 306 IF302 1 4 399 FI302	0003020001:SMAR-LD302:000807076 0003020002:SMAR-TT302:0000804679 0003020003:SMAR-IF302:004803599 0003020005:SMAR-FI302:006801718	6 6 6	9 9 9 9	E E E
History Fieldbus Network	LD02 306 TT01 306 IF302 1 4 399 FI302	0003020001:SMAR-LD302:000807076 0003020002:SMAR-TT302:0000804679 0003020003:SMAR-IF302:004803599 0003020005:SMAR-FI302:006801718	6 6 6	9 9 9 9	E E E
History Fieldbus Network	LD02 306 TT01 306 IF302 1 4 399 FI302	0003020001:SMAR-LD302:000807076 0003020002:SMAR-TT302:0000804679 0003020003:SMAR-IF302:004803599 0003020005:SMAR-FI302:006801718	6 6 6	9 9 9 9	E E E
S History	LD02 306 TT01 306 IF302 1 4 399 FI302	0003020001:SMAR-LD302:000807076 0003020002:SMAR-TT302:0000804679 0003020003:SMAR-IF302:004803599 0003020005:SMAR-FI302:006801718	6 6 6	9 9 9 9	E E E

Figure 5.1. Device List Page

The user can search for a specific device tag:

Tag Search:	Search	🗌 🗖 One Page

Figure 5.2. Searching for a Device

- 1. Type the device tag.
- 2. Click the button Search.
- 3. The device will be highlighted in the Device List.

AssetView Device List						
Tag Sea	rch: FI302	Search	One Page			
	SUMMARY					
	🗑 (5) 🔮 (0) 🔮 (0)	🙆 (3) 🛛 💐 (	(1)			
TAG	<u>10</u>	TRACKING	<b>DIAGNOSTIC</b>	MAINTENANCE		
LD02 306	0003020001:SMAR-LD302:000807076	۲	Ø	Q.		
<u>TT01 306</u>	0003020002:SMAR-TT302:0000804679	۲	۲	۵ <u>ټ</u>		
<u>IF302 1 4 399</u>	0003020003:SMAR-IF302:004803599	۲	Ø	Q.		
<u>FI302</u>	0003020005:SMAR-FI302:006801718	۲	۲	Q.		
<u>FY01 306</u>	0003020006:SMAR-FY302:034801735	۲	Ø	Ø,		

Figure 5.3. Search Results

The user can order the columns in alphabetical order, ascendent or descendent, clicking the column header.

In the Tag column, click the device tag to open the home page of the device.

In the Tracking column, the following icons indicates the device status:



Indicates the device has communication problems.



Indicates the device is operating in normal conditions.



Indicates the device is off-line.

In the *Diagnostic* column, the following icons indicates diagnostic events:



Indicates that a diagnostic event has occurred.

Indicates the device is operating in normal conditions.

In the Maintenance column, the following icons indicates the maintenance status for the device:



Indicates there are no pending maintenances for the device.

Indicates that maintenance should be executed in the device.

# **6.AUDIT TRAIL REPORTS**

AssetView has different types of reports to be configured by the user.

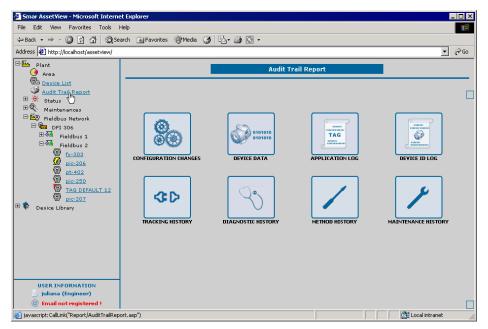


Figure 6.1. Audit Trail Reports in AssetView

The sections below describe the functionality of these reports and how to generate them.

For each report, the following filters will be available:

#### START DATE

Select the initial date to search for the information to generate the report.

#### END DATE

Select the final date to search for the information to generate the report.

#### PROTOCOL

Allows the user to select the devices of a specific communication protocol (Hart or Fieldbus).

#### DEVICE TYPE

Allows the user to select the type of the device from the list of devices registered in the database.

#### DEVICE TAG

This filter will display the list of tags from the devices registered in the database.

# 6.1 Configuration Changes Report

This report shows all changed parameters of the device in a specific period of time.

To generate this report, click the link *Configuration Changes* in the *Audit Trail Reports* page and select the options to configure the report.

	Audit Trail R	eport - Configuration (	Changes	
START DATE:		PROTOCOL:	All	
END DATE:		DEVICE TYPE:	All	
		DEVICE TAG:	All	Report

Figure 6.2. Filters for the Configuration Changes Report

After configuring the filters, click the button Report to generate the Configuration Changes Report:

<b>T</b> e 1 110 10 01								
Smar AssetView - Microsoft In		-						_ 8 ×
<u>1</u>	Tools	Help						
← Back ▾ ⇒ ▾ 🙆 😰 🚮	Qs	iearch 🛛 🚊 Favorit	es 🛞 Media	🎯   🖏 -	) ei			
Address 🙋 http://localhost/assetvi	iew/							€°G0
Address  http://locahost/assetvi Plant Area Device List Addit Trail Report G Status Maintenances Me Fieldbus Network Device Library USER INFORMATION		START DATE: END DATE: DATE / TME 4102004 14.45 4102004 14.45 4102004 14.57 4102004 14.57	September _		It Trail Re           ▼           ●           ●           ●           ●           ●           0           116           0	PROTOCOL: PROTOCOL: DEVICE TVPE: DEVICE TAG: % ▼ ● □ □ □ □ ELOCK TAG Menj Auf 07 27 000 00 000 BLA X 88 255 FY01_306_TRD FY01_306_TRD	Report ion Changes V/LUE System System System System System System System System System System System System System	
📙 juliana (Engineer)								-
Email not registered !		🐠) ।ৰ ৰ 1 of 1	▶ ▶ 8.5 >	<11 in 🔲 🗄	- H -			Þ
🕗 Click to expand							🚉 Local intranet	

Figure 6.3. Configuration Changes Report

#### 6.2 Device Data Report

This report shows the current status of the device in a specific period of time, listing the last values of all parameters at the selected date.

To generate this report, click the link *Device Data* in the *Audit Trail Reports* page and select the options to configure the report.

After configuring the filters, click the button Report to generate the Device Data Report.

File Edit View Favorites	Tools Help							
🛏 Back 🔹 🤿 🚽 🙆 🚮	🛛 📿 Search	💽 Favorite	es 🌚 Medi	ia 🎯 🗳 -	ð eí			
ldress 🙋 http://localhost/assetv	/iew/							-
🖄 Plant								
🧿 Area					Audit Tra	il Report - Device Da	ita	
Device List	STAF	RT DATE:			•	PROTOCOL:	All	
Audit Trail Report								
E 🔆 Status	END	DATE:			-	DEVICE TYPE:	All	
						DEVICE TAG:	All	Report
- « manicenances				_				
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Device Library			1					
	ž III –		sma	ar				
	Ê						Devic	e Data
	Bookmarks		udit Trail Repo	rt				
		ATE / TIME	USER	DEVICE TYPE	DEVICE TAG	BLOCK TAG		
	0/						PARAMETER	VALUE
	H -	10/2004 11:32		LD302			CALIBRATION TEMPERATURE	VALUE 4
			System		LD02_306	LD02_306_TRD LD02_306_TRD		
		10/2004 11:32	System	LD302	LD02_306	LD02_306_TRD	CALIBRATION TEMPERATURE CALIBRATION UNIT FACTORY HIGH POINT	4
		10/2004 11:32 10/2004 11:32 10/2004 11:32	System System System	LD302 LD302 LD302	LD02_306 LD02_306 LD02_306	LD02_306_TRD LD02_306_TRD LD02_306_TRD	CALIBRATION TEMPERATURE CALIBRATION UNIT FACTORY HIGH POINT CALIBRATION	4 1001 5000
	the site of the si	10/2004 11:32 10/2004 11:32	System System	LD302 LD302 LD302 LD302	LD02_306 LD02_306 LD02_306 LD02_306	LD02_306_TRD LD02_306_TRD LD02_306_TRD LD02_306_TRD	CALIBRATION TEMPERATURE CALIBRATION UNIT FACTORY HIGH POINT	4 1001 5000 0
	Thumbnails	10/2004 11:32 10/2004 11:32 10/2004 11:32	System System System	LD302 LD302 LD302	LD02_306 LD02_306 LD02_306	LD02_306_TRD LD02_306_TRD LD02_306_TRD	CALIBRATION TEMPERATURE CALIBRATION UNIT FACTORY HIGH POINT CALIBRATION FACTORY LOW POINT	4 1001 5000
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	Comments Thumbnails Y	10/2004 11:32 10/2004 11:32 10/2004 11:32 10/2004 11:32 10/2004 11:32 10/2004 11:32 10/2004 11:32 10/2004 11:32 10/2004 11:32 10/2004 11:32	System System System System System System System System System	LD302 LD302 LD302 LD302 LD302 LD302 LD302 LD302 LD302 LD302 LD302 LD302 LD302	LD02_308 LD02_308 LD02_308 LD02_308 LD02_308 LD02_308 LD02_308 LD02_308 LD02_308 LD02_308 LD02_308	L002_306_TRD L002_306_TRD L002_306_TRD L002_306_TRD L002_306_TRD L002_306_TRD L002_306_TRD L002_306_TRD L002_306_AI L002_306_AI L002_306_AI	CALIBRATION TEMPERATURE CALIBRATION UNIT FACTORY HIGH POINT CALIBRATION FACTORY LOW POINT LAST CALIBRATION TYPE SENSOR UNIT AUTO ZERO GWARACTERIZATION FUNCTION IO OPTION LOW CUT OFF	4 1001 5000 0 103 1151 1 85 1 0 0
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Figure 6.4. Device Data Report

## 6.3 Application Log Report

AssetView stores the devices' tags in the database. This report shows the different tags assigned to the device in the plant configuration.

To generate this report, click the link *Application Log* in the *Audit Trail Reports* page. The page with the filter options will be loaded.

After configuring the filters, click the button Report to generate the Application Log Report.

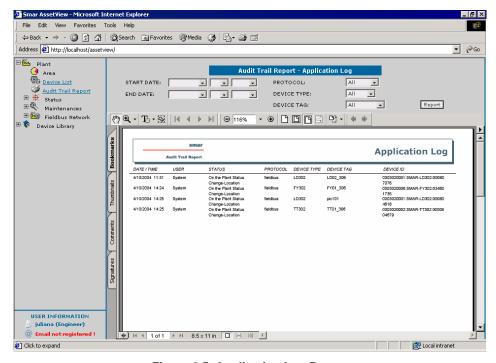


Figure 6.5. Application Log Report

# 6.4 Device ID Log Report

This report shows all device's IDs assigned to a tag in the plant configuration.

To generate this report, click the link Device ID Log in the Audit Trail Reports page.

After configuring the filters, click the button Report to generate the Device ID Log Report.

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Figure 6.6. Device ID Log Report

## 6.5 Tracking History Report

This report shows the occurrences of communication failures.

To generate this report, click the link *Tracking* in the *Audit Trail Reports* page.

After configuring the filters, click the button Report to generate the Tracking History Report.

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Figure 6.7. Tracking History Report

## 6.6 Diagnostic History Report

The diagnostic events indicate failures or operational conditions of the devices, and they are stored in the *AssetView* database.

To generate this report, click the link *Diagnostic History* in the *Audit Trail Reports* page. The page with the filter options will be loaded.

After configuring the filters, click the button Report to generate the Diagnostic History Report.

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		4/10/2004 11:34	System	Out-of-Service	fieldbus	LD02_306	LD02_306_RES	none		- 8
	ails	4/10/2004 11:34	System	Simulate hardware	fieldbus	LD02_306	LD02_306_RES	none		- 8
	Thumbnails	4/10/2004 11:34	System	jumper is present Out-of-Service	fieldbus	LD02_306	LD02_306_TRD	none		- I.
	2	4/10/2004 11:34	System	Out-of-Service	fieldbus	LD02_306	LD02_306_AI	none		
		4/10/2004 11:34	System	Out-of-Service	fieldbus	LD02_306	LD02_306_DSP	none		- 1
		4/10/2004 14:28	System	Block Configuration Error	fieldbus	pic101	pic101-ai	none		- 8
	22	4/10/2004 14:28	System	Out-of-Service	fieldbus	LD02_306	LD02_306_RES	none		- 1
	Comments	4/10/2004 14:28	System	Simulate hardware jumper is present	fieldbus	LD02_306	LD02_306_RES	none		- 1
	Ē	4/10/2004 14:28	System	Out-of-Service	fieldbus	LD02_306	LD02_306_TRD	none		_
	O	4/10/2004 14:28	System	Block Configuration Error	fieldbus	TT01_306	TT01_306_AI2	none		- 8
		4/10/2004 14:28	System	Device Needs	fieldbus	pic101	pic101-trd	none		_
		4/10/2004 14:28	System	Maintenance Now Input Failure/process	fieldbus	TT01 306	TT01 306 TRD1	none		- 1
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	i Si 🛛	4/10/2004 14:28	System	Block Configuration Error	fieldbus	TT01_306	TT01_306_AI1	none		- 8
		4/10/2004 14:28 4/10/2004 14:42	System System	Out-of-Service Block Configuration Error	fieldbus hart	LD02_306 DT-8	LD02_306_DSP O-HIRT-2	none		- 1
		4/10/2004 14:51	System	Out-of-Service	fieldbus	pic101	pic101-trd	none		- 8
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Figure 6.8. Diagnostic History Report

## 6.7 Method History Report

Methods are calibration procedures composed by a sequence of reading and writing in the device. The parameter values before writing and the values that were writen in the parameters, statics or dynamics, are stored in the database.

This report shows all methods performed and the parameters that have been changed.

To generate this report, click the link Method History in the Audit Trail Reports page.

After configuring the filters, click the button Report to generate the Method History Report:

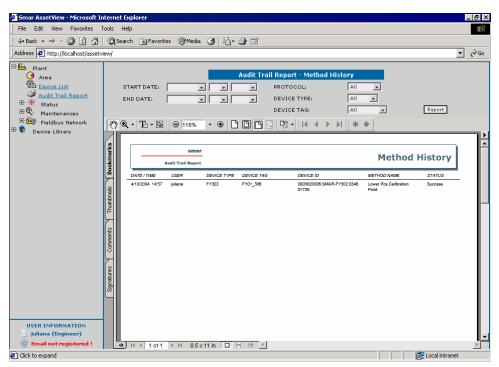


Figure 6.9. Relatório de Histórico dos Métodos

### 6.8 Maintenance Report

This report shows all maintenances scheduled and performed for each device.

To generate this report, click the link *Maintenance History* in the *Audit Trail Reports* page. The page with the filter options will be loaded.

After configuring the filters, click the button Report to generate the Maintenance Report.

#### Audit Trail Reports

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Figure 6.10. Maintenance Report

# **7.MONITORING THE DEVICE STATUS**

The field devices notify the system when a communication failure or operational conditions occur.

To display the events reported to AssetView, click the link Status in the topology to expand the monitoring options.

● Status	Indicates normal condition, no communication problem occurred.
🔅 Status	Indicates that a diagnostic event or communication problem has occurred.

## 7.1 Tracking

The *Tracking View* page shows the status of the devices and their location.

* Tracking	Indicates normal condition, no communication problem occurred.
Tracking	Indicates that a communication problem has occurred.

When the device is disconnected from the plant or has communication problems, it appears in the tracking list. Click the link *Status > Tracking* in the topology to open the *Tracking List*.

		Tracking View	
	Devices	Status	Location
Q	🗑 TT301-4	Select disconnection reason 💌 Submit	On Site Submit ACK
	ACV_pic-100	Operation	On Site 💽 Submit
	🖗 FI-215	Operation	On Site 💽 Submit
	(197)		

Figure 7.1. Tracking List

Click the magnifying glass icon to open a new window that shows detailed information about the device:

	Tracking View - Details	
	Device	
DEVICE ID	0C 75 56	
TAG	TT301-4	
MANUFACTURER	KTEK	
PROTOCOL	HART	
	Status	
STATUS TRACKING	Off-line	
TIME STAMP		
	Location	
LOCATION	On Site	
TIME STAMP	6/16/2004 8:08:26 PM	

Figure 7.2. Device details

#### 7.1.1 Defining the device status

To define the device status in the tracking list, click the list box in the *Status* column related to the device:

	Tracking View					
	Devices	Status	Location			
Q	🗑 TT301-4	Select disconnection reason 💌 Submit	On Site 💌 Submit ACK			
	ACV_pic-100	Select disconnection reason Off-line Bad Communication	On Site 💽 Submit			
	🖗 FI-215	Operation	On Site 🔹 Submit			
	~					

Figure 7.3. Device status

Select the option:

٠

- Off-line: the device is not communicating because it was removed from the plant.
- Bad Communication: the device is connected to the plant but has communication problems.

Click the button Submit to apply the alterations to the device. The tracking event will be automatically acknowledged. See the example below:

		Tracking View	
	Devices	Status	Location
Q	<sup>©</sup> ⊤⊤301-4	Off-line	On Site 💽 Submit 🖌 ACK
	ACV_pic-100	Operation	On Site 💽 Submit
	🖗 FI-215	Operation	On Site 💽 Submit
	(197)		

Figure 7.4. Defining the Device status

#### 7.1.2 Defining the device location

To define the device's location in the tracking list, click the list box in the *Location* column related to the device:

	Tracking View						
	Devices	Status	Location				
Q	🗑 TT301-4	Select disconnection reason 💌 Submit	On Site Submit ACK				
	ACV_pic-100	Operation	On Site Warehouse Maintenance Shop				
	🖗 FI-215	Operation	Disposed				
	<i>m</i>						

Figure 7.5. Device Location

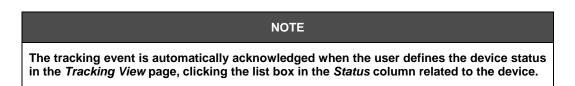
Select the option:

- On Site: the device is operating in the plant.
- *Warehouse*: the device is stored in the warehouse.
- Maintenance Shop: the device was removed from the plant for maintenance.
- Disposed: the device was removed from the plant and discarded.

Click the button *Submit* to apply the alterations to the devices.

#### 7.1.3 Acknowledging the Tracking Event

Click the link ACK in the Tracking View page to acknowledge the event.



The Acknowledge Tracking window will open:

ar AssetView - Microsoft Internet Explorer	_ [
Acknowledge Tracking	
TT301-4	
Select reason and press submit to Acknowledge	
Off-line	
Generate Maintenance	
Email Notification	
testsupport@smar.com.br 💽 Add Remove	
testsupport@smar.com.br	
	1
Submit Cancel	

Figure 7.6. Acknowledge Window

- Select the cause of the tracking event: *Off-line* if the device was removed from the plant or *Bad Communication* if the device has communication problems.
- Select the option *Generate Maintenance* to schedule a maintenance for the device, corrective or proactive. See section *Scheduling Maintenances for an Event* for details.
- Select the option *E-mail Notification* to send e-mails to the plant administrator and technicians.

Click the button Submit to acknowledge the tracking event.

#### NOTE

When acknowledging a tracking event, the user doesn't have to define a maintenance for the device, or the e-mail address to be notified.

To create a maintenance related to an acknowledged event, or define an e-mail address, click the link ACK in the Tracking View page and the Acknowledge window will open.

The *Tracking View* page will be updated and a check mark will appear in the column *ACK* for the events that have been acknowledged. Observe the figure below:

		Tracking View	
	Devices	Status	Location
Q	TT301-4	Off-line	On Site Submit ACK
	ACY_pic-100	Operation	On Site Submit
	🗑 FI-215	Operation	On Site 💽 Submit
	8		

Figure 7.7. Event Acknowledged

## 7.2 Diagnostic

The *Diagnostic View* page shows the events caused by failure notifications or operational conditions programmed by the user to be monitored by the system.

🖗 <u>Diagnostic</u>	Indicates normal condition, no communication problem occurred.
🗲 <u>Diagnostic</u>	Indicates that a diagnostic event has occurred.

When a diagnostic event occurs, it appears in the *Diagnostic View*. Click the link *Status > Diagnostic* in the topology tree to open the list of diagnostic events:

Diagnostic View					
	Device	Description	Block		
Q	🙆 <u>ktek</u>	Out-of-Service	KTEK_AI	ACK	
Q	🙆 pic-208	Device Needs Maintenance Now	pic-208-trd	ACK	
Q	🙆 <u>pic-208</u>	Input Failure/process variable has BAD status	pic-208-trd	ACK	
Q	🙆 <u>pic-218</u>	Input Failure/process variable has BAD status	pic-218-trd	ACK	
Q	🙆 <u>pic-222</u>	Input Failure/process variable has BAD status	pic-222-trd	ACK	
	<b>1</b> 3	Toput Esilura/process usrishla has BAD status	nin-222-ted	ACK	

Figure 7.8. Diagnostic View

Click the device icon in the Devices column to open the home page of the device.

Click the magnifying glass icon to open a new window that shows detailed information about the error related to the block of the device:

	Device	
DEVICE ID	0003020002;SMAR-TT302;004808288	
DEVICE TAG	TT302-1	
BLOCK TAG	TT302-1-trd2	
MANUFACTURER	SMAR	
PROTOCOL	FIELDBUS	
	Event	
ERROR DESCRIPTION	Input Failure/process variable has BAD status	
TIME STAMP	6/17/2004 10:32:02 AM	

Figure 7.9. Device Details

#### 7.2.1 Acknowledging the Diagnostic Event

Click the link ACK in the Diagnostic View page to acknowledge the event.

The Acknowledge Diagnostic window will open:

Smar AssetView - Microsoft Internet Explorer	_ 🗆 X
Acknowledge Diagnostic	
TT302-1	
Press submit to Acknowledge the Diagnostic	
Generate Maintenance	
Email Notification	
testsupport@smar.com.br 💽 Add Remove	
testsupport@smar.com.br	
Submit Cancel	

Figure 7.10. Acknowledging the Event

- Select the option *Generate Maintenance* to schedule a maintenance for the device, corrective or proactive. See section *Scheduling Maintenances for an Event* for details.
- Select the option *E-mail Notification* to send e-mails to the plant administrator and technicians.

Click the button Submit to acknowledge the diagnostic event.

NOTE
When acknowledging a diagnostic event, the user doesn't have to define a maintenance for the device, or the e-mail address to be notified.
To create a maintenance for an acknowledged event, or define an e-mail address, click the link <i>ACK</i> in the <i>Diagnostic View</i> page and the <i>Acknowledge</i> window will open.

The *Diagnostic View* will be updated and a check mark will appear in the column *ACK* for the events that have been acknowledged. Observe the figure below:

		Diagnostic View		
	Device	Description	Block	
Q	🙆 <u>ktek</u>	Out-of-Service	KTEK_AI	ACK
Q	@ pic-208	Device Needs Maintenance Now	pic-208-trd	🖌 АСК
Q	🙆 pic-208	Input Failure/process variable has BAD status	pic-208-trd	ACK
Q.	6 nic-210	Input Failure/process variable has BAD status	pic-218-trd	ACK

Figure 7.11. Event Acknowledged

# 7.3 Scheduling Maintenances for an Event

At the *Acknowledge* window, for tracking and diagnostic events, select the option *Generate Maintenance* to schedule a maintenance for the device. When the user clicks the button *Submit*, the window below will open:

in the second	rack-Diag/acknowledge_diagnostic_send.asp?Device 💶 🗖
	Generate Maintenance
	TAG DEFAULT 253
Maintenance from Diagnostic -	TAG DEFAULT 253 - pic-219-trd - Out-of-Service
MaintenanceType	Proactive
OperatorEmailAddress	Proactive
	Description
	<u>_</u>
	Submit Cancel

Figure 7.12. Generating the Maintenance

- 1. Select the type for the maintenance: proactive or corrective.
- 2. In the field *Description*, describe the procedure for executing the maintenance.
- 3. Click the button *Submit* to conclude. The window below should appear confirming the maintenance was created:

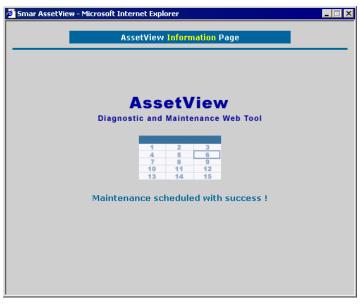


Figure 7.13. Confirming the Maintenance

# 8. MANAGING THE DEVICE MAINTENANCES

To open the list of scheduled maintenances, click the link Maintenances > List in the topology tree:

Smar AssetView - Microsoft Internet Explorer							
File Edit View Favorites Tools Help							
\$\Lambda = Back • \$\Rightarrow \$\lambda\$ for \$\lambda\$							
G Area			Maintenances List				
Device List							
<ul> <li></li></ul>	Туре	DeviceTag	Description	Actions			
🕀 🕨 Maintenances			Custom Predictive Maintenance				
Alarms	Predictive			<b>₫ X</b> %a			
A Search QE List QE D	* 🛟 Predictive		Predictive Maintenance	A 🖉 🗹			
<u><u></u></u>	🍄 🤲 Preventive	TAG DEFA	Lower Pressure Calibration	🗹 🛛 🍳 🖻			
History	🌣 🤲 Preventive	😨 <u>tag defa</u>	LD302 Preventive Maintenance	🛃 🔀 😪			
+ 😟 Fieldbus Network							
USER INFORMATION							
📙 juliana (Engineer)							
iubiase@smar.com.br							
iavascript:CallLink("Maintenance/r	maintenance_list.asp")			Local intranet //			

Figure 8.1. Maintenances List

The icon indicates that the maintenance is recurrent, while the icon indicates the maintenance should be executed only once.

The Type column indicates the type of the maintenance.

Click the device icon in the Device Tag column to open the home page of the device.

## 8.1 Adding Preventive and Predictive Maintenances

To schedule a maintenance for a specific device, click the link *Maintenances > New* in the topology tree. The *Maintenance Scheduling* page will be loaded:

Smar AssetView - Microsoft Internet Ex File Edit View Favorites Tools Help	plorer			_ 🗆 ×	
⇔Back • → - ③ 🗿 🚮 😡 Search	📷 Favorites 🛞 Media 🎯 🔹 🤅	🤹 🖸 🖣			
Address 🔊 http://localhost/assetview/					
Plant Area Povice List	N	ew Maintenance Schedulii	ng - Step 1		
<ul> <li>Audit Trail Report</li> <li>Status</li> </ul>	Occurs	Day	Starting at		
Haintenances	C Custom		Now		
🚧 Search	⊙ <sub>Day</sub>	11 • h 18 • min.	C Custom		
Que List Que New	C Week		May 🔽 25 🔽 2004 💌		
S H Dry	C Month				
Fieldbus Network     General DFI 306	C <sub>Vear</sub>	Recurrent	11 <b>v</b> h 18 <b>v</b> m		
표 🚠 Fieldbus 1	Scheduling Alert				
B 등 Fieldbus 2	Safety Period: 1 💌 day(s).				
pic-206	Notify user by email?(Alarm):				
pt-402 pic-250	Operator email address: jubias	e@smar.com.br	Add Remove		
Image: Second					
Deuice Library					
🗄 🎼 Device Library					
USER INFORMATION					
🧾 juliana (Engineer)		>> Next		_	
jubiase@smar.com.br     javascript:CallLink("Maintenance/maintenance			🔐 Local intra	-	

Figure 8.2. Adding Device Maintenances

- 1. In the field *Occurs*, select the maintenance occurrence: customized, daily, weekly, monthly or annual.
- 2. Select the option *Recurrent* in case the maintenance should occurs repeatedly.
- 3. In the field *Starting at*, select the date and the time that the maintenance should start. To customize the maintenance starting date, click the option *Custom*, select the maintenance date and the time.
- 4. Configure the maintenance alert in the field *Scheduling Alarm*, selecting the number of days that the user should be notified in advance.
- 5. In the field *Notify user by e-mail*, select Yes in the options list to send e-mails to the users, and add the e-mail address of the user that will be notified about the maintenance.
- 6. Click the button *Next* to proceed describing the maintenance details:

	New Mainte	nance Scheduling - Step	2
Title			
Device	Select Device		•
Periodicity	Daily (11h 29 m)	Safety Period	1 Day(s)
Starting at	5/25/2004 11:34:47 AM	Maintenance Type	Select Type 👤
	Instr	uctions (Maintenance De	scription)
		>> Next	
		22 1160V	

Figure 8.3. Maintenance Details

- 7. Type the title of the maintenance.
- 8. Select the device.

- 9. Select the type of the maintenance: preventive or predictive.
- 10. Type the instructions to perform the maintenance.
- 11. Click Next to conclude and update the Maintenances List.

### 8.2 Editing the Maintenance

In the topology tree, click the link Maintenances > List to open the list of scheduled maintenances.

In the column Action, click the edit icon, Action, related to the device, to open the Maintenance Edit window.

Maintenance	Edit - Microsoft Internet Explorer		
		Maintenance Edit	
Maintenance:	Weekly Predictive Maintenance		
Device Tag:			
Recurrent	At: Fri	Safety Period:	2 day(s)
Starting at:	Date: 25 - 5 - 2004 - Hour: 15 - : 0 -	Maintenance Type:	Predictive
	М	aintenance Template Desc	ription:
	Type the instructions for the mainten	ance procedure here.	
	Notify user by email?(Alarm):	Yes 🔻	
	Operator email address:	testsupport@smar.com.br	💌 Add Remove
		testsupport@smar.com.br	
	List emails:		
		SUBMIT	

Figure 8.4. Editing the Maintenance

Edit the necessary information and click the button Submit to apply the alterations.

## 8.3 Removing a Maintenance

In the topology tree, click the link Maintenances > List to open the list of scheduled maintenances.

In the column Action, click the delete icon, Action, related to the device.

Microsof	t Internet Explorer 🛛 🗙					
?	Are you sure you want to delete this maintenance?					
Device: TAG DEFAULT 12 Maintenance: Weekly Predictive Maintenance						
	OK Cancel					

Figure 8.5. Removing a Maintenance

Click Ok to confirm the operation and remove the selected maintenance.

## 8.4 Sending Service Orders

In the topology tree, click the link Maintenances > List to open the list of scheduled maintenances.

In the column *Action*, click the send service order icon, <sup>14</sup>, related to the device. This icon will only be available if any e-mail address was assigned to the maintenance.

The window to edit the service order will open:

Send S	ervice Order - Microsoft Internet Explorer	
	Send Service Order	
Q <sub>A</sub>	Weekly Preventive Maintenance	
To:	testsupport@smar.com.br;	
	Description	
	SEND	

Figure 8.6. Sending a Service Order

Type the instructions to be sent to the user and click the button Send to send the e-mail.

The window showed in the figure below should appear confirming the e-mail has been sent:

Resul	Result - Microsoft Internet Explorer					
	Send Service Order Result					
ą.	Maintenance: Custom Predictive Maintenance					
	Order was sended to [ jubiase@smar.com.br; ] with success!					
	CLOSE					

Figure 8.7. Confirming the Service Order

## 8.5 Searching for Maintenances

To search for a specific maintenance, click the link *Maintenances > Search* in the topology tree. The *Maintenance Search* page will be loaded:

🖉 Smar AssetView - Microsoft I	Internet Explorer		_ 🗆 ×
File Edit View Favorites T	ools Help		
🗢 Back 🔹 🤿 🗸 🙆 🚮	🐼 Search 😥 Favorites 🛞 Media 🧭 🛃 - 🎒 🔯	•	
Address 🙋 http://localhost/assetv	view/		• ∂⊙
⊡∰ Plant Ø Area	Mainte	nance Search	
Device List Audit Trail Report			
+ • status	Start Date	End Date	
Maintenances	Start Date: May 💌 25 💌 2004 💌	End Date: June 💌 24 💌 2004 💌	
And <u>search</u> Court	Device Tag: All		
New B History	Maintenance: All	3	
	[	Search	
USER INFORMATION			
😸 juliana (Engineer)			
🤕 jubiase@smar.com.br			
javascript:CallLink("Maintenance/	'maintenance_schedulesearch.asp")	Local intranet	

Figure 8.8. Searching for Maintenances

- 1. Select the starting date for the search in the field Start Date;
- 2. Select the ending date for the search in the field End Date;
- 3. In the field *Device Tag*, filter the tag of a specific device;
- 4. In the field *Maintenance*, filter the name of the maintenance defined by the user.
- 5. Click the button Search to view the results.

## 8.6 Opening the Maintenances History

To list the maintenances that have been executed, click the link *Maintenances > History* in the topology tree. The *History Search* page will be loaded:

	ools Help QQSearch 🗃 Favorites @Media 🎯 🛃 - 🎒 🖸 -	
Address   http://localhost/assetv  Area  A		▪ ∂Go
B     Status       Status     Maintenances       Maintenances     Maintenances <td>Start Date Start Date: April ¥ 1 ¥ 2003 ¥ Device Tag: All Maintenance: All S</td> <td>End Date End Date: May v 25 v 2004 v</td>	Start Date Start Date: April ¥ 1 ¥ 2003 ¥ Device Tag: All Maintenance: All S	End Date End Date: May v 25 v 2004 v
USER INFORMATION juliana (Engineer) Ubiase@smar.com.br javascript:Callink("Maintenance)	maintenance_historysearch.asp")	🔯 Local intranet

Figure 8.9. Searching for the maintenances executed

- 1. Select the starting date for the search in the field Start Date;
- 2. Select the ending date for the search in the field End Date;
- 3. In the field Device Tag, filter the tag of a specific device;

- 4. In the field *Maintenance*, filter the name of the maintenance defined by the user.
- 5. Click the button Search to view the results.

The page with the results for the search will be loaded:

		Maintenances Hist	ory		
DeviceTag	Maintenance	DueDate Status (days)	Date/Time	Туре	User
V 😨 tag defa	Preventive Maintenance	🔍 O (at day)	5/25/2004 3:36:16 PM	Preventive	juliana
V 😨 TAG DEFA	LD302 Preventive Maintena	🕲 O (at day)	5/25/2004 3:54:28 PM	Preventive	juliana
🗸 🗑 pic-206	Weekly Preventive Mainten	🕲 O (at day)	5/25/2004 3:56:48 PM	Preventive	juliana
🗴 😨 tag defa	Temperature Calibration	🕲 5 (in advance)	5/25/2004 4:05:13 PM	Preventive	juliana
/ 😨 pic-206	Custom Predictive Mainten	📲 1 (in advance)	5/25/2004 4:09:47 PM	Preditive	juliana
K 😨 tag defa	Preventive Maintenance	🖓 🖬 O (at day)	5/26/2004 3:59:11 PM	Preventive	juliana
K 😨 tag defa	LD302 Preventive Maintena	🕲 O (at day)	5/26/2004 4:00:47 PM	Preventive	juliana

Figure 8.10. Maintenances History

The icon **I** in the first column indicates that the maintenance has been executed.

The icon <sup>\*</sup> indicates that the maintenance has been removed.

## 8.7 Opening the Alarms List

To list the alarms that indicate the status of the scheduled maintenances, click the link *Maintenances > Alarms* in the topology tree. The page with the alarms list will be loaded:

😓 Back 🔹 🔿 👻 🙆 🚮 🤅		Favorites	adia 🎯 🗗 🎒 🖸 🔹	
address 🤌 http://localhost/assetvie	w/			<b>-</b> (
Plant Area			Maintenance Alarms	
Device List     Audit Trail Report     Status		Device	Description	Due Date
Maintenances	् 🌒	@ <u>pic-206</u>	Weekly Preventive Maintenance	5/25/2004 2:20:00 PM
AA	۹. –	TAG DEFA	LD302 Preventive Maintenance	5/25/2004 6:00:00 PM
Cis List Cis New History	۹. 🔵	🖗 <u>pic-206</u>	Custom Predictive Maintenance	5/26/2004 8:00:00 AM
History Fieldbus Network	९ 🌒	TAG DEFA	Temperature Calibration - Preventive	5/30/2004 3:30:00 PM
🗄 🖗 Device Library	Q. 🔵	TAG DEFA	Lower Pressure Calibration	6/1/2004 3:20:00 PM
USER INFORMATION				

Figure 8.11. Maintenance Alarms

The color indicates the severity of the alarm:



Indicates the maintenance should be executed in the near future.

۲

Indicates the deadline for the maintenance to be executed.



Indicates the date of the maintenance has expired.

Maintenance Registration Maintenance Preventive Maintenance 01 LD02\_306 Device Periodicity Safety Period 1 Days 🛞 Preventive DueDate 8/31/2004 10:04:00 AM Туре Instructions: Execute preventive maintenance. Maintenance Description: REMOVE REGISTER

To register a maintenance, click the icon 🔍 . The Maintenance Registration window will open:

Figure 8.12. Registering the Maintenance

Type the description of the maintenance procedure executed and click the button *Register* to confirm that the maintenance has been executed.

To remove the scheduled maintenance, click the icon related to the maintenance and, in the *Maintenance Registration* window, type a brief explanation about cancelling the maintenance and click the button *Remove*.

# 9. DEVICE LIBRARY

The *Device Library* is a set of information provided by manufaturers related to the devices, such as users manuals, calibration procedures, preventive maintenance items, device-related diagrams and images, and notes.

Observe the example below:

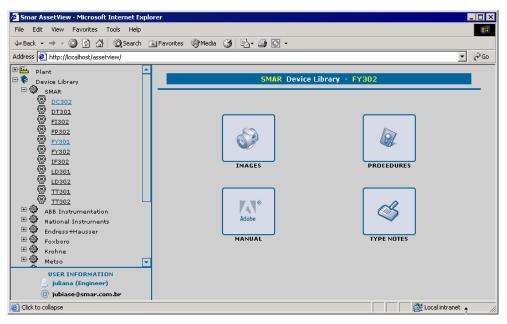


Figure 9.1. Device Library Page

Click the *Images* icon to open the folder that contains links to the diagrams and images of the device:

🖉 Smar Asset¥iew - Microsoft Internet Exp	lorer	_ 🗆 ×
File Edit View Favorites Tools Help		<b>1</b>
🖙 Back 🔹 🤿 🖉 🙆 🖓 🥘 Search	📾 Favorites 🚳 Media 🎯 🗟 🗸 🎒 🔯 🗸	
Address 🙋 http://localhost/assetview/		
🕂 🛄 Plant 🔼		
🖻 🖗 Device Library	SMAR Device Library - Files on Directory images	_
B SMAR		
DT301	[1] Fy 302	
FI302	[2] FY302 Block Diagram	
9 <u>FP302</u>	[3] FY302 Exploded View	
Image: Constraint of the	[4] FY302 Dimensional Drawing	_
IF302	5 FY302 Pneumatic Transducer Schematic	
	[6] FY302 Transducer Block Diagram	-
<u><u><u> </u></u></u>		
9 <u>TT301</u> 9 TT302	Back to FY302 Main Page	
🗄 🏶 National Instruments		
Endress+Hausser		
E Groboe		
E 🐲 Krohne E 🏶 Metso		
m A Metso		
USER INFORMATION		
juliana (Engineer) @ jubiase@smar.com.br		
Click to collapse	🕅 🕅 Local intra	unt (
Click to collapse		net //,

Figure 9.2. Example of Device Images

Smar AssetView - Microsoft Inter	net Exploi	rer _	
File Edit View Favorites Tools	Help		
🔃 Back 🔹 🤿 🖉 🙆 🖓	Search 👔	🖥 Favorites 🞯 Media 🧭 🗟 🗸 🎒 🖸 🗸	
Address 🛃 http://localhost/assetview/			è60
🕂 🔛 Plant	<u> </u>		
🖻 🖗 _Device Library		SMAR Device Library - Files on Directory manual	
B 🗶 SMAR			-
DC302			
<u>DT301</u>		[1] Manual FY302 English	
영 <u>pC302</u> 영 <u>PT301</u> 영 <u>F1302</u> 영 <u>F1302</u> 영 <u>F1302</u> 영 <u>F1302</u> 영 <u>F1302</u> 영 <u>IE302</u> 영 <u>IE301</u> ( <u>D301</u> ( <u>D301</u> ) ( <u>D302</u> ) ( <u>D302</u> ) ( <u>D301</u> ) ( <u>D302</u> ) ( <u>D</u>		[2] Manual FY302 Portuguese	
FP302			
FY301		Back to FY302 Main Page	
FY302			
W <u>1F302</u>			
9 <u>LD301</u>			
ABB Instrumentation	4		
🕀 🏶 National Instruments			
🗄 🎲 Endress+Hausser			
🕀 🎲 Foxboro			
🖽 🍪 Krohne			
🕀 🍪 Metso	-		
USER INFORMATION	-		
📙 juliana (Engineer)			
🧿 jubiase@smar.com.br			
Click to collapse		🛛 🖉 Local intranet	1.

Click the Manual icon to open the folder that contains links to the documentation of the device:

Figure 9.3. Links to Manuals

Click the *Type Notes* icon to open the list of notes for the device. See section *Managing Device Notes* for details.

## 9.1 Managing Device Notes

Navigate through the *Device Library* tree, browsing the manufactures and devices. Click a device icon to open the respective library page.

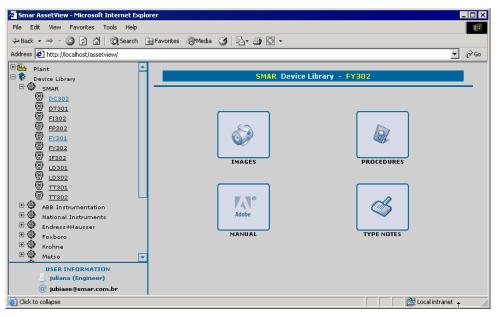


Figure 9.4. Device Library Page

Click the icon *Type Notes* to open the list of notes related to the device.

ID	NOTES	DATE
5 It is recommendab	le, for every new calibratio	20/5/2004 16:21:10
4 The Auto-Setup op	eration should be performed	20/5/2004 16:20:10
길 In hazardous areas	; with explosion proof requi	20/5/2004 16:19:11
2 Throughout the op	eration of the positioner, i	20/5/2004 16:18:21
Add Notes	<u>Update Notes</u>	<u>Delete Notes</u>

Figure 9.5. Notes on the FY302

## 9.1.1 Adding Notes

To add a note to a device, click the link Add Notes and the page below will appear.

De	vice Library - Notes about FY302	
	Insert your note about this device type :	
	Add Notes Reset	
Add Notes	<u>Update Notes</u>	<u>Delete Notes</u>
	Back to FY302 Main Page	

Figure 9.6. Adding Notes

Type the text and click the button Add Notes. The Notes List will be updated.

Click the number related to the note in the *ID* column to open a new window with the complete note text:

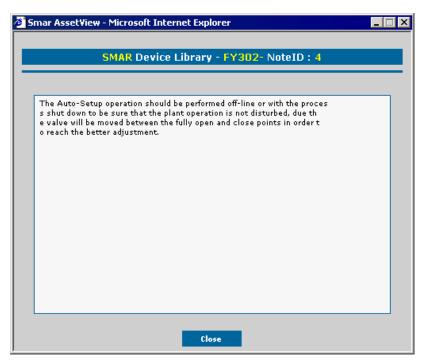


Figure 9.7. Device Note

## 9.1.2 Updating a Note

To update a note, click the link *Update Notes*. Select the note to be edited and click the button *Change*. The following page will appear:

	te your information about this Device 1	
The Auto-Setup operation should that the plant operation is not dis close points in order to reach the	le performed off-line or with the proc turbed, due the valve will be moved be better adjustment.	ess snut down to be sure tween the fully open and
	Update	
Add Notes	Update Notes	Delete Notes

Figure 9.8. Editing Notes

Edit the text and click the button Update to apply the alterations.

## 9.1.3 Removing Notes

To remove a note, click the link *Delete Notes*. Select the note to be removed and click the button *Delete*.

ID	NOTES		DATE	Delete
4	The Auto-Setup operation should be perform	med	20/5/2004 16:28:07	
5	It is recommendable, for every new calibrat	:io	20/5/2004 16:21:10	<b>V</b>
3	In hazardous areas with explosion proof req	ļui	20/5/2004 16:19:11	
2	Throughout the operation of the positioner,	i	20/5/2004 16:18:21	~
	Add Notes Upda	te Notes	Delete No	otes

Figure 9.9. Deleting Notes

The user can select one or more notes to be deleted at the same time, checking the box in the *Delete* column related to the notes.

# 9.2 Creating Custom Folders

To create a custom folder for a specific device, open the Windows Explorer and locate the *AssetView* installation directory. The default path will be "Program Files\Smar\Assetview\".

In the directory "Web Pages", locate the folder "DeviceLibrary\MANUFACTURERS". This folder contains the manufacturers' folders that will be displayed in the topology tree of the *Device Library* in *AssetView*.

e Edit View Favorites Tools Help				10 A
Back 🔹 🔿 👻 🔯 Search 📴 Folders 🧭				
dress 📄 D:\Program Files\Smar\Assetview\Web Page	es\Devi	eLibrary\MANUFACTURERS		▼ ∂Go
Iders	×	Name 🔺	Size Ty	pe
🖻 🧰 Program Files		ABB Instrumentation	Fik	e Folder
🗄 🧰 adobe		Endress+Hausser	File	e Folder
components		Fisher Controls	File	e Folder
🗄 🦲 MySQL-Front		Elowserve	Fik	e Folder
🗄 🧰 Rational		Exboro Foxboro	Fik	e Folder
🗄 🧰 RoboHelp Office		🗀 Fuji Electric	Fik	e Folder
🖻 🧰 Smar		Honeywell	Fik	e Folder
🖻 🦲 Assetview		C Krohne	Fik	e Folder
🗀 bin		Metso	Fik	e Folder
- GLServer Support		National Instruments	Fik	e Folder
🖻 🧰 Web Pages		Dohken	Fik	e Folder
- 🗀 css		Rosemount	Fik	e Folder
⊞-      CustomErrors		Rotork	Fik	e Folder
🗉 🛅 Device Support		SMAR.	Fik	e Folder
🕀 🧰 DeviceLibrary		🗀 Valtek	Fik	e Folder
- a css		Discourse Strategy Vokogawa Electric	File	e Folder
- 🗀 IMAGES				
- C MAINTENANCE				
🗄 🚖 MANUFACTURERS		1		
NOTES		1		
🕀 🧰 DeviceList		1		
🕀 🧰 FF Generic		1		
🕀 🧰 Hart Device Support	-	1		

Figure 9.10. Folder Structure fo the Device Library

Select the directory of the device's manufacturer, open the device folder and create a new folder with the desired name. See the example below:

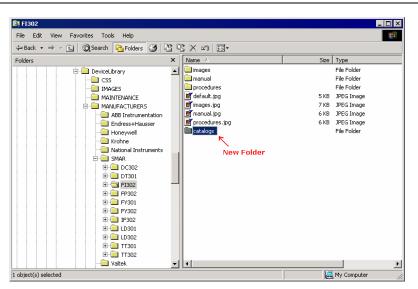


Figure 9.11. Creating a new Folder

If the user add a image with the same name of the folder created and the extension.*jpg*, this image will be used as the folder icon in the device's page at the *Device Library*. See the example:

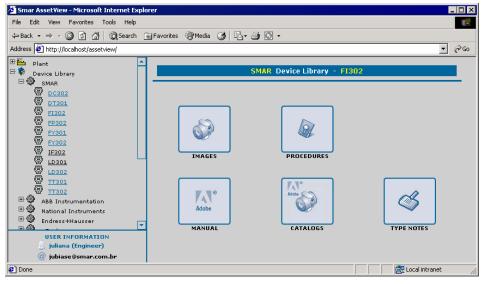


Figure 9.12. Custom Folder in the Device Library

### NOTE

If the user doesn't create a custom image for the new folder, the image *default.jpg* will be used as the icon of this new folder in the device page.

# 10. TROUBLESHOOT

1. AssetServer is monitoring the changes of the parameters (Tracking Activated). An online Web page from AssetView is requested and all fields in the page are blank, instead of showing the values. At the same time, the monitoring procedure (Tracking) stops.

Run the *dcomcnfg* application, select the application "*Smar OPC & Conf Server for DFI302*" and click *Properties*. At the *Identity* tab, select the option *The Interative User*. Click *Ok* to conclude.

Distributed COM Configuration Propertie Applications Default Properties Default Se		
Applications:	Smar OPC & Conf Server for DFI302 Properties	X
OpPrintServer2 Paintbrush PeriodicTimer PSN2 PSN2Note PSNGiveNote	General Location Security Identity Endpoints Which user account do you want to use to run this application?	
PWM Document Remote Debug Manager for Java Remote Storage Recall Notification Client SENS Logon Events SENS Network Events	<ul> <li>The interactive user</li> <li>The launching user</li> </ul>	
SENS OnNow Events SENS OnNow Events SENS Subscriber for EventSystem Event Server Extension Objects SetupLogServices Class Smar OPC & Conf Server for DFI302	C This user:	]
Smar OPC & Conf Server for HSE Smar OPC & Conf Server for PCI Card Smar OPC 2.0 & Conf Server for DF65	Password:	
Properties OK	C The System Account (services only)	
	OK Cancel Apply	

#### 2. When plotting charts, the plotting area starts flickering and no image is displayed.

The user must restart the Internet Information Server.

- Click Start > Settings > Control Panel > Administrative Tools > Internet Services Manager.
- Right-click the machine name and click the option Restart IIS. Select Restart Internet Services on <machine name> from the drop-down menu and click Ok.
- Wait until this procedure is concluded and try plotting the charts again.
- The database selected is MS SQL Server and the following error message appears when opening a Web page from AssetView: Error Type: SmarAssetDLL (0x80040E4D) Method '~' of object '~' failed /Hart Device Support/62/03/144/144diagnostic.asp. line 91

Refer to the section *Database Configuration > Using SQL Server*. When configuring the **Client Side**, in the *Connection* tab of the *Data Link Properties* dialog box, make sure the **AssetView** database is selected in the item 3. Also, the option **Use a specific user name and password** must be selected in the item 2 at the *Connection* tab, where **SA** is the user name.

4. When trying to execute a operation in the page, the following error message appears:



The user logged probably doesn't belong to the *Engineers* group. Refer to the section User Management in the AssetView Server.

**IMPORTANT!** If the user belongs to a **domain**, the group *Engineers* must exist in the domain server and the user must be added to this group to perform specific operations.

5. When trying to select a HART device that is not generic (that means the device has its own Web page, such as the FY301) to be registered, the following error message appears:



This message occurs because the system was not able to read the *Device Type* from the HART device, for example because of bad communication.

Click No and then click Ok to close the List of Devices dialog box. On the Standard menu of the AssetServer window, click the option Register again.

6. When trying to start tracking the devices, the following error message appears:



This message occurs because *AssetView* reads the online information from all of the blocks during the tracking procedure. If the communication with the blocks fails, the process will be halted by this error message.

Open the topology in the SYSCON application, and make sure the registered devices and the respective blocks are communicating properly. Then, try tracking the devices again.

7. When trying to start the Asset Server after the installation, the following error message appears:

ODBC driv	ver for Microsoft Access installation problem	×
8	Unable to load odbctl32.dll	
	OK	

This message occurs if *Windows* is not installed in the drive C and the version of the *SYSTEM302* is older than 6.1.3.3.

If the user is running the Asset Server with **Windows 2000**, click Start > Settings > Control Panel > Administrative Tools > Data Sources (ODBC).

If the user is running the Asset Server with **Windows NT**, click Start > Settings > Control Panel > ODBC.

The ODBC Data Source Administrator dialog box will open. Click the tab System DSN and doubleclick the Asset View data source name to open the dialog box. Click the Select button and locate the file **AssetView.mdb** in the folder "<SYSTEM302 Installation Path>\AssetView\Database\".

Click Ok and close the ODBC Data Source Administrator dialog box.

# 8. When trying to open the AssetView main page, the following error message appears: "The page cannot be found".

The Virtual Diretories of the AssetView might not have been created correctly during the installation.

Refer to the Appendix B for specific information about the Virtual Diretories.

# 9. The Device icon in the Tracking Result window doesn't have its normal state recovered after the communication is restored.

Close the *Tracking Result* window and open it again by clicking *View* > *Tracking Result* on the main menu, or simply pressing **Ctrl** + **L**, on the keyboard.

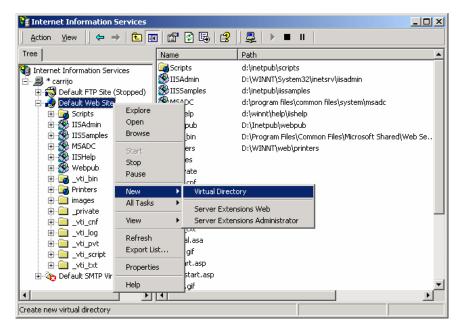
# A. ASSETVIEW VIRTUAL DIRECTORIES

## Creating the Virtual Directories

If the virtual directories were not created during the *SYSTEM302* installation, it will be necessary to create them according to the procedure described below.

Click Start > Settings > Control Panel and double-click Administrative Tools. Start the Internet Services Manager. The Internet Information Services window will open.

Expand the directory tree of the server machine and right-click the *Default Web Site* directory. Select *New > Virtual Directory*.



The Virtual Directory Creation Wizard dialog box will open. Click Next and type the name **AssetView** to create the virtual directory. Click Next.

Virtual Directory Creation Wizard
Virtual Directory Alias You must give the virtual directory a short name, or alias, for quick reference.
Type the alias you want to use to gain access to this Web virtual directory. Use the same naming conventions that you would for naming a directory.
Alias: AssetView
< <u>B</u> ack <u>N</u> ext > Cancel

To select the path of the new virtual directory, click *Browse* and got to the *SYSTEM302* installation folder, at "../Program Files/System302/".

Select the folder "AssetView/Web Pages". Click Ok.

Virtual Directory Creation Wizard 🗙 🗙
Web Site Content Directory Where is the content you want to publish on the Web site?
Enter the path to the directory that contains the content.
Directory:
C:\Program Files\System302\Assetview\Web Pages Browse
< Back Next > Cancel

On the following dialog box, select the options Read and Run scripts (such as ASP).

Virtual Directory Creation Wizard	×
Access Permissions What access permissions do you want to set for this virtual directory?	9
Allow the following:	
☑ <u>R</u> ead	
✓ Run scripts (such as ASP)	
Execute (such as ISAPI applications or CGI)	
☐ <u>W</u> rite	
🗖 Br <u>o</u> wse	
Click Next to complete the wizard.	
< <u>B</u> ack <u>N</u> ext >	Cancel

Click Finish to conclude this task.

At the Internet Information Services window, check if the virtual directory was created.

Once the virtual directory is created correctly, it will be necessary to configure the properties of the virtual directory according to the section below.

# Configuring the Properties of the Virtual Directories

At the Internet Information Services window, expand the directory tree of the Default Web Site directory. Right-click the AssetView virtual directory and select Properties from the menu.

🝓 Internet Information	n Services			
🗍 Action View 🗍 🖨	• > 🗈 💽	😭 🗗 🗟   😫 🗍	💂 🕨 🔳 📗	
Tree			Name	Path 🔺
Tree Tree Tree Carrio Default FTP S Default FT	ervices ite (Stopped) Site Explore Open Browse New A		Name Scripts IISAdmin IISS amples MSADC IISS amples MSADC IISHelp Vebpub Vebpub Vebpub Vebpub Vebpub Vebpub Vebpub Vebpub Vebpub Vecpub	Path       d:\inetpub\scripts       D:\WINNT\System32\inetsrv\iisa- d:\inetpub\iissamples       d:\inetpub\iissamples       d:\inetpub\iishalp       D:\Inetpub\ishalp       D:\Inetpub\ishalp
⊕	Refresh	pped)	<ul> <li>isstart.asp</li> <li>localstart.asp</li> <li>mmc.gif</li> </ul>	, ▶
<u>,</u>	Help			, , , , , , , , , , , , , , , , , , , ,

The AssetView Properties dialog box will open. At the Virtual Directory tab, select all of the options in the Local Path rectangle.

In the Application Settings rectangle:

- Click Create and type AssetView in the Name box.
- Select Low (IIS Process) in the Application Protection box.

AssetView Properties	2 ×
Virtual Directory Documents Directory Security HTTP Headers Custom Errors	_
When connecting to this resource, the content should come from: A directory located on this computer	
C A share located on another computer C A redirection to a <u>U</u> RL	_
Logal Path: C:\Program Files\Smar\AssetViewAssetView Browse	
Script source access     E Log visits     Read     Index this resource     Write     Directory browsing	
Application Settings	.
Application name: AssetView Remove	
Starting point: <default configuration<="" td="" web\assetview=""><td>1</td></default>	1
Execute Permissions: Scripts only	111
Application Protection: Low (IIS Process)	
OK Cancel Apply Help	

At the *Directory Security* tab, click *Edit* in the *Anonymous Access and Authentication Control* rectangle. Check that the *Anonymous access* option is not selected.

Authentication Methods					
Anonymous access					
No user name/password required to access this resource.					
Account used for anonymous access:					
Authenticated access					
For the following authentication methods, user name and password are required when - anonymous access is disabled, or - access is restricted using NTFS access control lists					
<u>Basic authentication (password is sent in clear text)</u>					
Select a default domain: Edit					
Digest authentication for Windows domain servers					
Integrated Windows authentication					
OK Cancel <u>H</u> elp					

Click OK to close the dialog box and close the AssetView Properties dialog box.

# B. ASSETVIEW DATABASE BACKUP PROCEDURES

Use the AssetView Backup application to backup the AssetView database. The AssetView Backup is easy to execute, and it can be used with the SQL Server or the MSDE database.

The AssetView Backup must be located in the same directory of the file "SmarAssetServer.exe", because these applications use the same connection ("Assetview.udl").

It is recommended to run the *AssetView Backup* application in the machine where the database server is installed. Even if the *AssetView Backup* is executed in a remote machine, the backup will be saved in the machine where the database server is installed.

#### Attention:

- Store the backup files in a secure place. It is recommended to save three copies of each backup file and store them in different locations.
- Execute the backup procedure on regular intervals.
- Define a reasonable period of time to store old backup versions.

#### IMPORTANT

Before executing the AssetView Backup, make sure that the Asset Server is not being executed and the AssetView pages are not open.

## Creating the Backup File

1. Locate the folder "\AssetView\bin" in the AssetView installation directory and execute the AssetView Backup application. The window below will open:



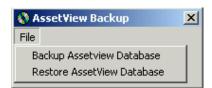
2. Select the option *Backup AssetView Database*. The *Backup AssetView* dialog box will open:

Backup AssetVie	v			? ×
Save in:	🚍 Local Disk (C:)	•	+ 🗈 💣 🎟 •	
History Desktop My Documents	aplicativos Cournents and Settings Thetpub Interwise Program Files temp WINNT2 WUTemp			
My Computer	File <u>n</u> ame: <b>Save as type:</b> Backup file (*.bak	)	•	<u>S</u> ave Cancel

- 3. Select the folder where the backup file will be saved and type the name for the file.
- 4. Click Save to conclude.

## Restoring the Database

- 1. Make sure that the Asset Server is not being executed and the AssetView pages are not open;
- 2. Create a new database for AssetView;
- 3. Locate the folder "\AssetView\bin" in the AssetView installation directory and run the application AssetView Backup. The window below will open:



4. Select the option *Restore AssetView Database*. The *Backup AssetView* dialog box will open:

Backup AssetVie	w					? ×
Look jn:	Local Disk (0	2)		•	+ 🗈 💣 🎟	
History History Desktop My Documents	aplicativos Documents an Inetpub Interwise Program Files temp WINNT2 WUTemp Backup 10-06-		i ackup, bak			
My Computer	File <u>n</u> ame: Files of <u>t</u> ype:	Backup	file (*.bak) n as <u>r</u> ead-only		•	<u>O</u> pen Cancel

5. Select the icon of the backup file that will be restored and click Open to conclude.

# C. ASSETVIEW & FY302

# FY302 Home Page

The figure below shows the FY302 initial page and links:

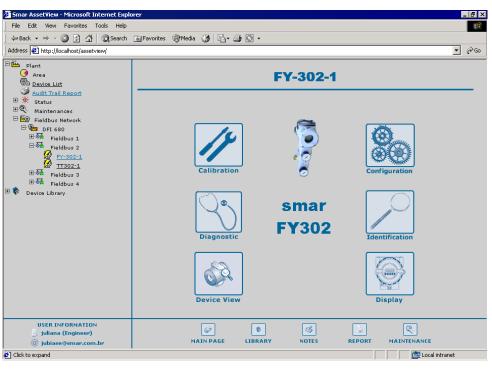


Figure C.1

The following sub-sections will describe each one of the pages developed for the *Device* maintenance.

## FY302 Identification Page

This page displays information relevant to the positioner. The user can easily identify and specify the positioner in the physical plant.

	F		S.	S	9	
CALIBR	ATION CO	DNFIGURATION	DEVICE VIEW	DIAGNOSTIC	DISPLAY	IDENTIFICATION
IDENTIFI	CATIO	ON a	000	Manufac Device Device	Type:	SMAR FY302 FY-302-1
	D	evice			Actuat	or
Tag Device ID SW Revision Hardware Revision Manufacturer	3.46e 05026 SMAR	006:SMAR-FV302	2:80052	Act Main ID Act Model Num Actuator SN	2	
Device Type Device Revision	6				Valve	
DD Revision DD Revision Device SN	2 8038			Valve Main I D	2	
Mainboard SN Module SN Ordering Code	3480173			Valve Model Num Valver SN		

Figure C.2

## Device

TAG	indicates the tag associated to the positioner in the physical plant. The tag can use up to 32 characters.
DEVICE ID	indicates the identification code of the positioner. This code can use up to 32 characters.
SW REVISION	indicates the software revision of the positioner.
HARDWARE REVISION	indicates the hardware revision of the positioner.
MANUFACTURER	identifies the positioner manufacturer.
DEVICE TYPE	identifies the type of the positioner for a specific manufacturer.
DEVICE REVISION	indicates the revision of the positioner.
DD REVISION	indicates the revision of the DD.
DEVICE SERIAL NUMBER	indicates the serial number of the positioner.
MAINBOARD SERIAL NUMBER	indicates the serial number of the main board.
MODULE SERIAL NUMBER	indicates the serial number of the positioner transducer module.
ORDERING CODE	indicates the ordering code of the positioner.

## Actuator

ACT MAIN ID	indicates the identification number of the actuator manufacturer.
ACT MODEL NUM	indicates the identification number of the actuator model.
ACTUATOR SERIAL NUMBER	indicates the serial number of the actuator.

#### Valve

VALVE MAIN ID	indicates the identification number of the valve manufacturer.
VALVE MODEL NUM	indicates the identification number of the valve model.
VALVE SERIAL NUMBER	indicates the serial number of the valve.

## FY302 Configuration Page

There are a few parameters in the FY302's transducer block that can be used in the predictive and proactive maintenance. Some of them can be read online, while other parameters requires the process to stop or the plant control to be set to manual.

It is possible to detect performance decreasing comparing the current parameters with standard values and therefore determine the predictive and proactive maintenance.

The user can check the general diagnostic status in the FY302 Diagnostic Page.

Operational Statistics (OEs) are data stored in the device that inform its usage, abnormal behaviors, or number of times that a specific condition occurred, such as total valve travel (odometer), total of reversals and maximum deviation limit between the valve position and the setpoint.

Using the FY302 Configuration Page, the user can set limit conditions for the operational statistics. If a specific OE reaches the limit value, the device notifies the system and this notification is highlighted in the *Diagnostic Page*.

1	0		S	Ŷ		
CALIBRATION CONFIG	URATION I	DEVICE VIEW	DIAGNOSTIC	DISPLAY	IDENTIFICATION	RECONCILE
CONFIGURA	TION	٥٥		Manufacturer Device Type: Device Tag:		ı
		Devi	ce Operation !	Mode		
Ope	eration Mode N	<u>lote</u>	Auto	-		
De	viation Ale	rt		Rev	ersal Alert	
Deviation Enabled Deviation Time Deviation Deadband	False	<b>.</b> 	Revers	al Enabled al Limit al Deadband	False 💌	
Trav	el Accum A	lert	1. 	Sensor	Pressure Alert	
Travel Enabled Travel Limit Travel Deadband	False 100 1	• _ _		Pressure In High Lim Pressure In Low Limi		
[		}	Travel Control			
Characterization Type Curve Bypass Curve Length <u>CU</u>	Table True 10 RVE X/ CURVE	 	Final V. Travel I	alue Cutoff Low alue Cutoff High Limit Low Limit High	2 100 0 100	
Submit						

Figure C.3

## **Device Operation Mode**

Indicates the operation mode for the device:

005	if this mode is selected, the value of the parameter <i>Mode Block</i> will be <i>Out of Service</i> for the <i>Resource</i> , <i>Transducer</i> and <i>Analog Output</i> blocks.
AUTO	if this mode is selected, the value of the parameter <i>Mode Block</i> will be <i>Auto</i> for the <i>Resource, Transducer, Display</i> and <i>Analog Output</i> blocks.
MAN	if this mode is selected, the value of the parameter <i>Mode Block</i> will be <i>Manual</i> for the <i>Analog Output</i> block, and <i>Auto</i> for the <i>Resource, Transducer</i> and <i>Display</i> blocks.
CAS	if this mode is selected, the value of the parameter <i>Mode Block</i> will be <i>Cas</i> for the <i>Analog Output</i> block, and <i>Auto</i> for the <i>Resource</i> , <i>Transducer</i> and <i>Display</i> blocks.

### **Deviation Alert**

DEVIATION ENABLED	enables checking the difference between the current valve position and the desired set point. If the difference exceeds the dead band for more than a given period of time, an alert will be generated and will remain active until this difference decreases.
DEVIATION TIME	set a period of time (in seconds). The valve must exceed the dead band during this period of time before generating the alert.
DEVIATION DEAD BAND	indicates the magnitude of the valve deviation value (in percentage). An alert is generated when the valve exceeds this value during a given period of time.

The user can check the status of this diagnostic alarm in the FY302 Diagnostic Page, in "Deviation Limit Exceeded".

### **Reversal Alert**

**REVERSAL:** indicates the number of times that the valve changes the direction according to the movement. The reversal total is incremented when the valve changes the direction and the movement total exceeds the specified limit.

REVERSAL ENABLED	enables checking the difference between the reversal total and an established limit. An alert is generated when the reversal total exceeds this limit.
REVERSAL LIMIT	indicates the reversal total limit. An alert is generated when the reversal total exceeds this limit. Enter a reversal value lower than the limit to acknowledge the alert.
REVERSAL DEAD BAND	indicates the magnitude of the valve movement value (in percentage). This value is used to increment the reversal total.

The user can check the general diagnostic status in the *FY302 Diagnostic Page*. See the example below:

CONFIGURATION	N 🦉	Manufacturer: Device Type: Device Tag:	SMAR Fy302 Fy-302-1				
	Device Operation Mode						
Operation M	lode Note	Other -					
L							
Deviation	Alert	Revers	al Alert				
Deviation Enabled	alse 💌	Reversal Enabled	False 👤				
Deviation Time 1		Reversal Limit	0				
Deviation Deadband 4		Reversal Deadband	6				

Figure C.4

The user can check the alarm generated in the FY302 Diagnostic Page:

Valve Position Position 5.57351		
Temperature Advanced Status		
Highest Temperature Lowest Temperature Current Temperature	80.93884 °C -34 °C 26.9804 °C	<ul> <li>Magnet not Centralized or not Detected</li> <li>Slow Valve Movement or Low Air Supply</li> <li>Temperature Out of Range</li> <li>Base not Trimmed</li> <li>Output Module not Initialized or not Connected</li> <li>Deviation Limit Exceeded</li> <li>Travel Limit Exceeded</li> <li>Reversal Limit Exceeded</li> </ul>



Note that the variable *Reversals* in the *Valve Totals* area exceeded the limit specified. The alarm is indicated in red in the *Advanced Status* area.

## Travel Accum Alert

**TRAVEL (odometer):** indicates the equivalent number of full strokes. The travel is incremented when the number of changes exceeds the dead band value. It is used to indicate diaphragm replacement and actuator overhaul.

TRAVEL ENABLED	enables checking the difference between the odometer and an established limit. An alert is generated when the odometer exceeds this limit.
TRAVEL LIMIT	indicates the odometer value limit. An alert is generated when the odometer exceeds this limit. Enter an odometer value lower than the limit to acknowledge the alert.
TRAVEL DEAD BAND	indicates the magnitude of the valve movement value (in percentage). This value is used to increment the odometer.

The user can check the status of this diagnostic alarm in the FY302 Diagnostic Page, in "Travel Limit Exceeded".

### Sensor Pressure Alert

An alert is generated every time the input pressure exceeds the limit.

SENSOR PRESSURE IN HIGH LIMIT	indicates the limit of the maximum input pressure.
SENSOR PRESSURE IN LOW LIMIT	indicates the limit of the minimum input pressure.

The user can check the general diagnostic status in the FY302 Diagnostic Page.

## **Travel Control**

The valve travel conditions will be based on the parameters below.

CHARACTERIZATION TYPE	characterization type of the valve.
	<ul> <li>LINEAR: the real position will be represented as a linear chart with the desired position.</li> </ul>
	<ul> <li>TABLE: the user can characterize the real positions according to its application.</li> </ul>
	<ul> <li>EP25, EP33, and EP50: the EP (Equal Percentage) curves provide a larger travel only for wide set point variation.</li> </ul>
	<ul> <li>QO25, QO33, and QO50: the QO (Quick Open) curves provide a larger travel for narrow set point variation.</li> </ul>
CURVE BYPASS	enables/disables the curve.
CURVE LENGTH	indicates the number of points that will be used to define the curve.
FINAL VALUE CUTOFF LOW	if FINAL VALUE is less than this value the valve is forced to be fully closed. FINAL VALUE is the value of the desired position.
FINAL VALUE CUTOFF HIGH	if FINAL VALUE is greater than this value the valve is forced to be fully open. FINAL VALUE is the value of the desired position.
TRAVEL LIMIT LOW	odometer lower limit.
TRAVEL LIMIT HIGH	odometer upper limit.

The user can check the general diagnostic status in the FY302 Diagnostic Page.

To configure the points that define the characterization curve, click the link *Curve X/ Curve Y*, as indicated below:

Travel Control			
Characterization Type Curve Bypass Curve Length	Table - True -	Final Value Cutoff Low Final Value Cutoff High Travel Limit Low	2 100 0
CURVE X/ CURVE Y		Travel Limit High	100

Figura C.6

The table with the points will open:

Curve	X/ Curv	e Y -	FY-302-1
Cu	rveX (%)	Cur	veY (%)
[1]	55	[1]	0
[2]	95	[2]	10
[3]	0	[3]	20
[4]	100	[4]	40
[5]	95	[5]	60
[6]	15	[6]	80
[7]	14	[7]	90
[8]	13	[8]	100
[9]	10	[9]	10
[10]	11	[10]	0
	<u>OK</u>	<u>C</u>	LOSE

Figura C.7

Type the points of the curve and click *Ok* to send the values to the device. Click *Close* to close the table and return to the configuration page.

# FY302 Diagnostics Page

This page displays the device status.

CALIBRATION CONFIGURATION DEVICE VI	EW DIAGNOSTIC DISPLAY IDENTIFICATION
DIAGNOSTIC	Manufacturer: SMAR Device Type: FY302 Device Tag: FY-302-1
Valve Totals	Valve Performance
Strokes 47 Reversals 0 Travel 1.#QNAN	Closing Time 2.24 sec Opening Time 0.32 sec
Val	ve Position
Position	1.#QNA
0% 25%	50% 75% 100%
Temperature	Advanced Status
Highest Temperature 45 °C Lovest Temperature 1 °C Current Temperature 21 °C	<ul> <li>Magnet not Centralized or not Detected</li> <li>Slow Value Movement or Low Air Supply</li> <li>Temperature Out of Range</li> <li>Base not Trimmed</li> <li>Output Module not Initialized or not Connected</li> <li>Deviation Limit Exceeded</li> <li>Travel Limit Exceeded</li> <li>Reversal Limit Exceeded</li> </ul>
Sensor Pressure	Sensor Pressure Status
Sensor Pressure Out 1 0 psi Sensor Pressure Out 1 0 psi Sensor Pressure Out 2 0 psi	Sensor Pressure Not installed
	Status
Block Configuration Error     Link Configuration Error     Simulate Active     Local Override     Device Fall Safe Sat     Device Reads Maintenance Soon     Input Fallure/Process Variable has BAD status     Output Fallure     Memory Failure     Lost Static Data     Lost NV/Data     Readback: Check Failed	<ul> <li>Device Needs Maintenance Now</li> <li>Power-ip</li> <li>Out-of-Service</li> <li>General Error</li> <li>Calibration Error</li> <li>Configuration Error</li> <li>Eletronics Failure</li> <li>Hichanical Failure</li> <li>I/O Failure</li> <li>Data Integrity Error</li> <li>Software Error</li> <li>Algorithm Error</li> </ul>
	Charts
CHARACTERIZATION VALVE SIGNATURE TRAVEL DEVIATION	HYSTERESIS LOOP STEP RESPONSE AS FOUND AS LEFT
	arts History HISTORY

Figure C.8

## Valve Totals

STROKES	indicates the number of times that the valve fully opens and closes.
REVERSALS	indicates the number of times that the valve changes the direction according to the movement. The reversal total is incremented when the valve changes the direction and the movement exceeds the dead band.
TRAVEL (odometer)	indicates the equivalent number of full strokes. The travel is incremented when the number of changes exceeds the dead band value. It is used to indicate diaphragm replacement and actuator overhaul.

## Valve Performance

CLOSING TIME	indicates the period of time (in seconds) that the valve takes to go from fully open to fully closed. This time is used to indicate a problem with the actuator, diaphragm leak and problem with the pneumatic tube.
OPENING TIME	indicates the period of time (in seconds) that the valve takes to go from fully closed to fully open. This time is used to indicate a problem with the actuator, diaphragm leak and problem with the pneumatic tube.

## Valve Position

POSITION	indicates the current valve position.
----------	---------------------------------------

## Temperature

HIGHEST TEMPERATURE	indicates the highest temperature value measured by the temperature sensor of the positioner.
LOWEST TEMPERATURE	indicates the lowest temperature value measured by the temperature sensor of the positioner.
CURRENT TEMPERATURE	indicates the temperature value measured by the temperature sensor of the positioner.

## Advanced Status

Shows the status of the continuous diagnostic, including the conditions of the mechanical module:

MAGNET NOT CENTRALIZED OR NOT DETECTED	automatic alarm.
SLOW VALVE MOVEMENT OR LOW AIR SUPPLY	automatic alarm.
TEMPERATURE OUT OF RANGE	automatic alarm.
BASE NOT TRIMMED	automatic alarm.
OUTPUT MODULE NOT INITIALIZED OR NOT CONNECTED	automatic alarm.
DEVIATION LIMIT EXCEEDED	this alarm indicates the <i>Deviation Limit</i> configured in the configuration page.
TRAVEL LIMIT EXCEEDED	this alarm indicates the <i>Travel Limit</i> configured in the configuration page.
REVERSAL LIMIT EXCEEDED	this alarm indicates the <i>Reversal Limit</i> configured in the configuration page.

Highlighted fields indicate the current diagnostic condition.

### Sensor Pressure

SENSOR PRESSURE IN	indicates the input pressure sensor reading.	
SENSOR PRESSURE OUT1	indicates the pressure sensor reading of the output 1.	
SENSOR PRESSURE OUT2	indicates the pressure sensor reading of the output 2.	

## Sensor Pressure Status

### Status

Shows the device status of the continuous diagnostic, including the condition of the function block, the electronic and the mechanical module. All of the alarms are automatic. The device will notify the user even if the alarm has not been configured.

BLOCK CONFIGURATION ERROR	indicates the error status of the hardware and software components associated with the block.
LINK CONFIGURATION ERROR	indicates the error status of a link.
SIMULATE ACTIVE	indicates that the device is on simulation mode.
LOCAL OVERRIDE	indicates that the device is being operated manually.
DEVICE FAULT STATE SET	indicates that the device is in safe fault state condition.
DEVICE NEEDS MAINTENANCE SOON	the internal diagnostic according to the user configuration or device internal checkup has detected that the device will need maintenance soon.
INPUT FAILURE/PROCESS VARIABLE HAS BAD STATUS	the condition of the process variable is BAD.
OUTPUT FAILURE	indicates a failure in the output that could be due to the electronic or the mechanical module.
MEMORY FAILURE	indicates an electronic failure according to the internal checkup process, such as an incorrect checksum detected in the main memory.
LOST STATIC DATA	indicates that the device lost data from the flash or the EEPROM memory.
LOST NV DATA	indicates that the device lost data from the RAM memory.
READ BACK CHECK FAILED	indicates a discrepancy in reading the read back value. This could be caused by a hardware failure.
DEVICE NEEDS MAINTENANCE NOW	the internal diagnostic according to the user configuration or device internal checkup has detected that the device needs maintenance.
POWER UP	indicates that the device has finalized a power up procedure.
OUT-OF-SERVICE	indicates that the function block is Out-of-Service.

GENERAL ERROR	an error has occurred and could not be classified as one of the errors below.
CALIBRATION ERROR	an error occurred during the calibration of the device or a calibration error has been detected during the operation of the device.
CONFIGURATION ERROR	an error occurred during the configuration of the device or a configuration error has been detected while operating of the device.
ELECTRONIC FAILURE	an electronic component has failed.
MECHANICAL FAILURE	a mechanical component has failed.
I/O FAILURE	an I/O failure has occurred.
DATA INTEGRITY ERROR	indicates that data stored in the system may be no longer valid, for example, because the checksum of the data in the RAM memory has failed when compared to the data in the non-volatile memory.
SOFTWARE ERROR	the software has detected an error that could have been caused by an improper interruption of a service routine, an arithmetic overflow, a watchdog timer, etc.
ALGORITHM ERROR	the algorithm used in the transducer block generated an error. This could be due to an overflow, data reasonableness failure, etc.

### Charts

**CHARACTERIZATION:** this chart will show the behavior of the current valve position compared to the desired value. *AssetView* will generate the desired value. The user can analyze the behavior of the valve response, such as stuck and stress. It will be easier to set the parameters of the positioner in the *Calibration* page, such as the Servo\_Gain and the Servo\_Reset, according to the application tuning and the dynamic response of the positioner (under and overshoot performance).

This chart benefits the preventive and predictive maintenance because the user can save the curves and compare them later.

When this chart is selected, a message box appears warning the user that this procedure must be executed when the process stops or the plant control is set to manual. Open and close movements may interfere in the process.

Performance results are related to the chosen characterization type, Servo gains and Servo reset parameters.

AssetView will set the Resource and Transducer mode blocks at Auto to draw the chart. The mode block values will be restored at the end of this process.

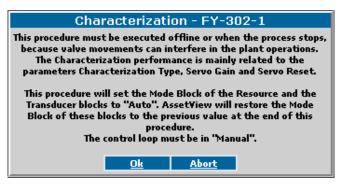


Figure C.9

The process starts when the user clicks OK.

The characterization chart is drawn with the AO Block XD\_Scale set from 0 to 100%. The value of the AO Mode Block must be *Manual*. The message shown below appears if the AO Block XD\_Scale is not from 0 to 100%, or the AO Mode Block parameter is not in *Manual*. At the end of this process, *AssetView* will restore the scale values.

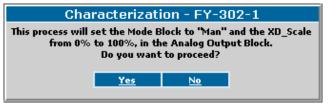


Figure C.10

Click Yes to open the window where the user will configure the delay time to get the desired position and also the time out for the graphic interface to get a valid data response from the device. If the graphic interface does not receive the data information during this time, a message to abort the procedure will appear.

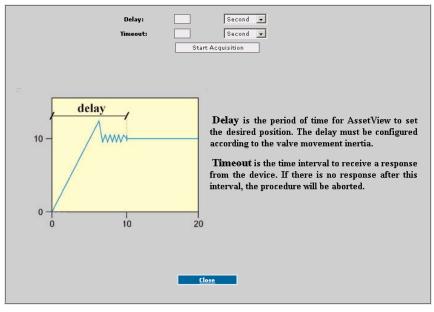


Figure C.11

Remember that the response curve will depend on the response inertia of the valve analyzed. For slow valves, the time configured must be longer because it takes longer for the valve to reach the desired position.

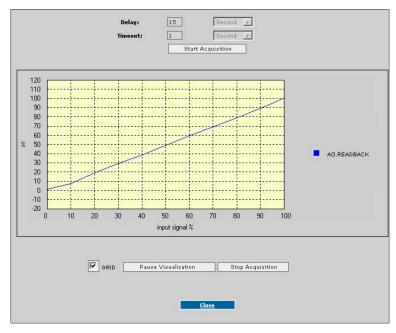


Figure C.12

The previous conditions are restored at the end of the process.

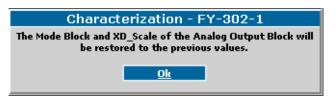


Figure C.13

**STEP RESPONSE:** this chart will show the behavior of the current valve position and the desired position value related to the time. It is an easier way to check the tuning between the servo PID and the positioner.

The user can analyze the behavior of the valve response, such as stuck and stress. It benefits the preventive and predictive maintenance because the user can save the curves and compare them later.

When this chart is selected, a message box appears warning the user that this procedure must be executed when the process stops or the plant control is set to manual. Open and close movements may interfere in the process.

Performance results are related to the chosen characterization type, Servo gains, Servo reset parameters and the valve inertia (slow or fast valve response).

AssetView will set the Resource and Transducer Mode Block at Auto to draw the chart. The Mode Block values will be restored at the end of this process.

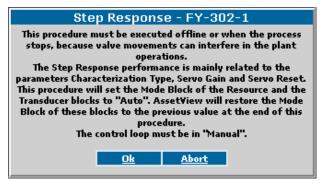


Figure C.14

The process starts when the user clicks OK.

The step response chart is drawn with the AO Block XD\_Scale set from 0 to 100%. The value of the AO Mode Block must be *Manual*. The message shown below appears if the AO Block XD\_Scale is not from 0 to 100%, or the AO Mode Block parameter is not in *Manual*. At the end of this process, *AssetView* will restore the scale values.

Step Response - FY-302-1			
This procedure will set the Mode Block to "Man" and the XD_Scale from 0% to 100%,			
in the Analog Output Block. Do you want to proceed?			
<u>Yes</u>	No		

Figure C.15

Click Yes to open the window where the user will configure the Total Sample Time (monitoring time) and the Scan Time (time between readings). Remember that the response curve will depend on the response inertia of the valve analyzed. For slow valves the time configured must be longer because it takes longer for the valve to reach the desired position.

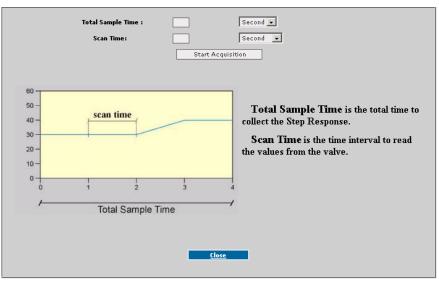


Figure C.16

The user sets the set point value. This chart lets the user skim in the time coordinates during the analysis.

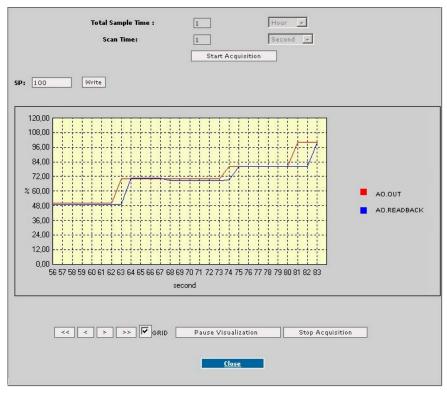
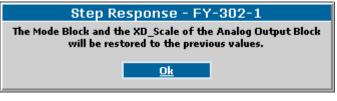


Figure C.17

The previous conditions are restored at the end of the process.





VALVE SIGNATURE: this chart will show the behavior of the position related to the output pressure. The desired value will be generated by *AssetView*. This chart allows the user to analyze the behavior of the valve response according to the air pressure. For example, the user can save the chart during the installation or the commissioning procedure and then compare the current chart with the one saved before. It will be possible to check if more pressure is necessary to establish the same position. If it is true, it means that there is a mechanical stuck.

#### NOTE

The chart Valve Signature will be plotted only if the FY302 has the pressure sensor.

When this chart is selected, a message box appears warning the user that this procedure must be executed when the process stops or the plant control is set at manual. Open and close movements may interfere in the process.

Performance results are related to the chosen characterization type, Servo gains, Servo reset parameters and input pressure.

AssetView will set the Resource and Transducer Mode Block at Auto to draw the chart. The Mode Block values will be restored at the end of this process.

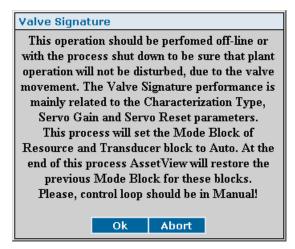


Figure C.19

The process starts when the user clicks OK.

The valve signature chart is drawn with the AO Block XD\_Scale set from 0 to 100%. The AO Mode Block must be set at Manual. The message shown in the figure below appears if the AO Block XD\_Scale is not from 0 to 100%, or the AO Mode Block parameter is not in *Manual*. At the end of this process, the *AssetView* will restore the scale values.

Valve Signature		
This process will set the Mode Block of Analog Output Block to Man and the XD_Scale of Analog Output Block from 0% to 100%.		
Would you like to proceed?		
Yes No		

Figure C.20

Click Yes to open the window where the user will configure the delay time to get to the desired position and the time out for the graphic interface to get a valid data response from the device. If the graphic interface does not receive the data information during this time, a message to abort the procedure will appear.

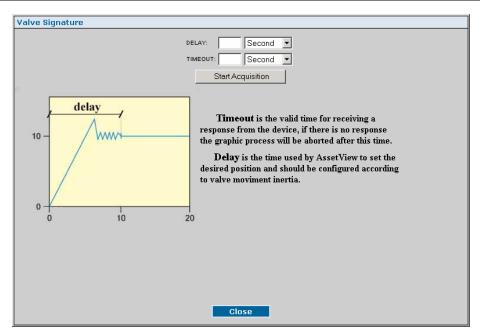


Figure C.21

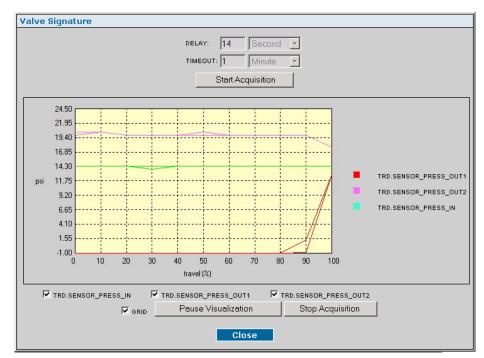


Figure C.22

The previous conditions are restored at the end of the process.

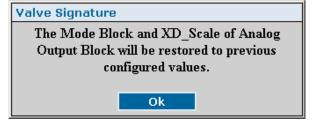


Figure C.23

**TRAVEL DEVIATION:** this chart will show the behavior of the error accumulated in the process (between the current valve position and the desired position) related to the time. It lets the user analyze the behavior of the valve response, such as stuck and stress. It benefits the preventive and predictive maintenance because the user can save the curves and compare them later.

The value displayed in the histogram is the arithmetic average of 10 acquisitions.

In stuck conditions the error accumulated would tend to increase because the instantaneous error would increase. This fact can be verified once the servo PID action increases.

Travel Deviation - FY-302-1			
This procedure will start the Travel Deviation Trend.			
	<u>Ok</u>	Abort	

Figure C.24

The user must configure the time between readings.

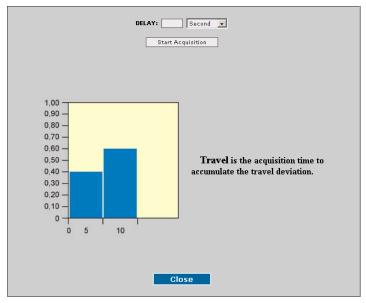


Figure C.25

Click Start Acquisition to generate the chart:

DELAY: 1 Second 💌 Start Acquisition		
3.49 3.14 2.79 2.44 2.09 % 1.75 1.40 1.05 0.70 0.35 0.00	9 19 29 39 49 59 69 79 89 99 109 119 129 139 149 159 169 179 189 second	
	GRID Pause Visualization Stop Acquisition	

Figure C.26

**HYSTERESIS LOOP**: this chart will show the histeresis behavior of the valve when moving the valve from fully closed to fully open and vice-versa. It lets the user analyze the behavior of the valve response, such as stuck and stress. It benefits the preventive and predictive maintenance because the user can save the curves and compare them later.

The user must configure the time between readings.

When this chart is selected, a message box appears warning the user that this procedure must be executed when the process stops or the plant control is set at manual. Open and close movements may interfere in the process.

Performance results are related to the chosen characterization type, Servo gains and Servo reset parameters.

AssetView will set the Resource and Transducer Mode Block at Auto to draw the chart. The Mode Block values will be restored at the end of this process.

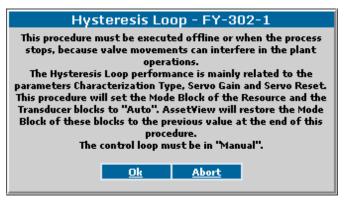


Figure C.27

The process starts when the user clicks OK.

The chart is drawn with the AO Block XD\_Scale set from 0 to 100%. The AO Mode Block must be set at Manual. The message shown below appears if the AO Block XD\_Scale is not from 0 to 100%, or the AO Mode Block parameter is not in *Manual*. At the end of this process, the *AssetView* will restore the scale values.

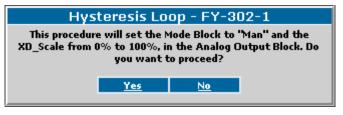


Figure C.28

Click Yes to open the window where the user will configure the delay time to get to the desired position and the time out for the graphic interface to get a valid data response from the device. If the graphic interface does not receive the data information during this time, a message to abort the procedure will appear.

Remember that the response curve will depend on the response inertia of the valve analyzed. For slow valves the time configured must be longer because it takes longer for the valve to reach the desired position.

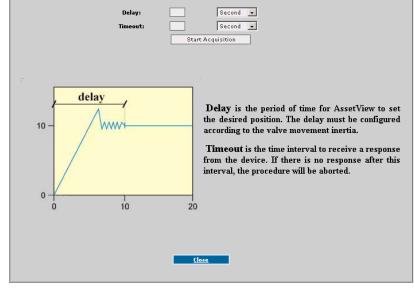


Figure C.29

Click Start Acquisition to generate the chart:

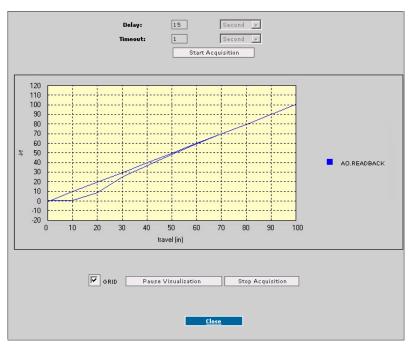
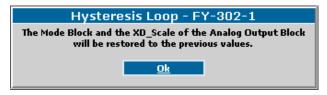


Figure C.30

The previous conditions are restored at the end of the process.





AS FOUND AS LEFT: this chart allows the user to store the device status before executing a calibration procedure. The user can save the chart of the set point related to the *Primary Value*. After executing the calibration, generate the chart again with the same characteristics to analyze the deviation.

When this chart is selected, a message box appears warning the user that this procedure must be executed when the process stops or the plant control is set to manual. Open and close movements may interfere in the process.

AssetView will set the Resource and Transducer Mode blocks at Auto to draw the chart. The Mode Block values will be restored at the end of this process.

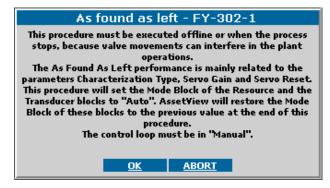


Figure C.32

The process starts when the user clicks OK.

The chart is drawn with the parameter XD\_Scale of the AO block set from 0 to 100%. The value of the parameter *Mode Block* of the AO block must be *Manual*. The message shown below appears if the XD\_Scale of the AO block is not from 0 to 100%, or the AO Mode Block parameter is not in *Manual*. At the end of this process, *AssetView* will restore the scale values.

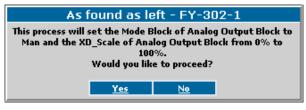


Figure C.33

Click Yes to open the window where the user will configure the scan time to read the values from the valve and the number of writings made in the device.

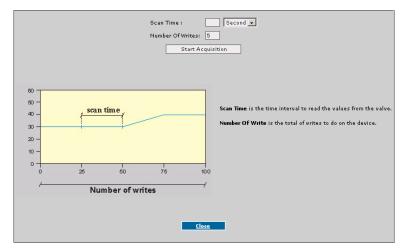


Figure C.34

Click Start Acquisition to generate the chart:

	As Found As Left - FY01_306	
	Scan Time : 80 Second 🚽	
	Number Of Writes: 5	
	Start Acquisition	
1.00		
0.90		
0.80		
0.70		
0.60		
% 0.50		STATUS: Bad Comm
0.40		VALVE POSITION
0.30		
0.20		
0.10		
0.00		
	set point	
	DEVIATION 🗭 GRID Pause Visualization Stop Acquisition	
	DEVIATION GRID Pause Visualization Stop Acquisition	
	CLOSE	

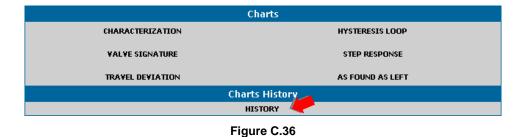
Figure C.35

Select the option Deviation to display the values of the error for each point written in the instrument.

The previous conditions are restored at the end of the process.

#### **Charts History**

After saving the charts, it will be possible to view the charts history:



Click the link Hystory in the Charts History field:

- a) In the Type list box, select the type of the desired chart;
- b) Type a start and/or end date to search for the saved charts;
- c) The *Hystory* list box will display the list of charts generated for the selected type.

See the example below:

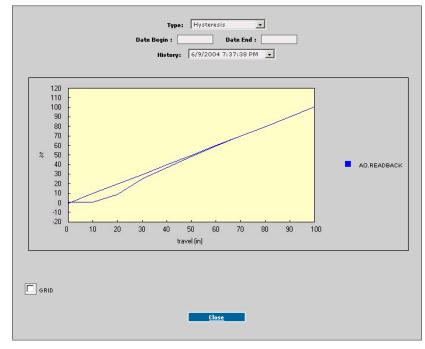


Figure C.37

## FY302 Calibration Page

1		<u>So</u>		
CALIBRATION CONFIG	URATION DEVICE VIEW DI	AGNOSTIC	DISPLAY IDENTIFICATION RECONCILE	
CALIBRA			Manufacturer: SMAR Device Type: FY302 Device Tag: FY-302-1	
	Device (	peration Mode	e	
OPER/	ATION MODE NOTE	Man 💌		
Va	lve Settings		User Calibration	
Type Fault State Fault State Time Air To Valve Act	Rotary v 2 % 0 Air to Open v Direct v		LOWER POS CALIBRATION POINT UPPER POS CALIBRATION POINT SETUP SETUP REPORT PRESSURE SENSOR CALIBRATION TEMPERATURE CALIBRATION LOOP TEST DYNAMIC VALUES	
Tur	ing Settings	n.	Calibration Information	
Rate Down Rate Up KP TR Servo Pid Deadband Servo Pid Bypass Backup Restore	NING NOTES 1 %/sec 100 %/sec 8 8 8 8 8 8 9 9 9 9 9 9 9 9 9 9 9 9 9	Cal Min Span Cal Unit Cal Method Cal Loc Cal Date Cal Who	Undef User cal standard calibratio sm [Wed] May 19,2004 09:43: juliana	
Po	Position Scale Temperature Calibration			
EU0% 0 % Unit Index	EU100% 100 %	Cal Tempera Secondary V		
		NCED SETUP		
TSO Final Value Cutoff Low 2 Final Value Cutoff High 10	Set Point           %         SP Lo Lim         0           00         %         SP Hi Lim         100	%	Flow Char Characterization Type Table • Curve Bypass True • Curve Lenght 20 <u>CURVE X/ CURVE Y</u>	
		Submit		

This page displays configuration data used in the calibration procedures.

Figure C.38

### **Device Operation Mode**

Indicates the operation mode for the device:

OOS	if this mode is selected, the value of the parameter <i>Mode Block</i> will be <i>Out of Service</i> for the <i>Resource</i> , <i>Transducer</i> and <i>Analog Output</i> blocks.
AUTO	if this mode is selected, the value of the parameter <i>Mode Block</i> will be <i>Auto</i> for the <i>Resource</i> , <i>Transducer</i> , <i>Display</i> and <i>Analog Output</i> blocks.
MAN	if this mode is selected, the value of the parameter <i>Mode Block</i> will be <i>Manual</i> for the <i>Analog Output</i> block, and <i>Auto</i> for the <i>Resource</i> , <i>Transducer</i> and <i>Display</i> blocks.
CAS	if this mode is selected, the value of the parameter <i>Mode Block</i> will be <i>Cas</i> for the <i>Analog Output</i> block, and <i>Auto</i> for the <i>Resource</i> , <i>Transducer</i> and <i>Display</i> blocks.

### Valve Settings

ТҮРЕ	the user configures the valve type: linear or rotary.
FAULT STATE	safe fault value (in percentage).
FAULT STATE TIME	indicates the time before the valve changes to the safe fault value (in seconds).
AIR TO	air condition to open or close.
VALVE ACT	action type: direct or reverse.

### **Tuning Settings**

• •	
RATE DOWN	the user configures the set point step-down rate (in percentage) related to the time.
RATE UP	the user configures the set point step-up rate (in percentage) related to the time.
КР	Servo PID proportional gain.
TR	Servo PID integral time.
SERVO PID DEAD BAND	set the Servo PID dead band. It should not be changed by the user.
SERVO PID BYPASS	enables/disables the Servo PID.
BACKUP RESTORE	enables save and restore the calibration, setup and important configuration data. It is recommended to run the backup process with the " <i>Sensor Data Backup</i> " option after the auto-calibration process (setup).

#### **Calibration Information**

CAL MIN SPAN	indicates the smallest difference allowed between the calibration upper position and the calibration lower position.
CAL UNIT	indicates the calibration unit, in percentage always.
CAL METHOD	indicates the calibration method. Before the device is released, it is calibrated according to the manufacturer criteria. If the user calibrates the positioner, it will indicate that the user executed the calibration.
CAL LOC	indicates the location of the calibration, such as a laboratory, area 1, etc.
CAL DATE	indicates the date of the executed calibration.
CAL WHO	indicates the person responsible for the executed calibration.

#### **Position Scale**

EU 0%	indicates the lower limit for the input scale of the position variation.
EU100%	indicates the upper limit for the input scale of the position variation.
UNITS INDEX	indicates the engineering unit: percentage (%), radian (rad) or millimeter (mm).

To change the scale and the unit, *AssetView* will display a message indicating that the AO Mode Block will be set at a safe condition, with the value *OOS* (out of service).

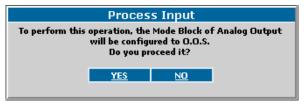


Figure C.39

Click Yes and configure the scale limits:

Process Input
EU 0 0
EU 100
UNITS 100 -
Submit
NEXT

Figure C.40

Edit the values and click the button *Submit*. Wait until the values are sent to the device and then click *Next* to conclude. The AO Mode Block will be restored:

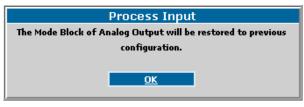


Figure C.41

Click Ok to conclude.

#### Temperature Calibration

CAL TEMPERATURE	indicates the last temperature calibration value of the positioner temperature sensor. The user must type the reference temperature and the device will be calibrated with this value. Note the - 40 to 85 <sup>°</sup> Celsius limits when executing the calibration.
SECONDARY VALUE UNIT	indicates the unit related to the temperature.

### Advanced Setup

#### TSO

FINAL VALUE CUTOFF LOW	if FINAL VALUE is less than this value the valve is forced to be fully closed. FINAL VALUE is the value of the desired position.
FINAL VALUE CUTOFF HIGH	if FINAL VALUE is greater than this value the valve is forced to be fully open. FINAL VALUE is the value of the desired position.

### Set Point Limits

SP LO LIMIT	set point lower limit of the AO Block.
SP HI LIMIT	set point upper limit of the AO Block.

### Flow Char

CHARACTERIZATION TYPE	characterization type of the valve.
	<ul> <li>LINEAR: the real position will be represented as a linear chart with the desired position.</li> </ul>
	<ul> <li>TABLE: the user can characterize the real positions according to its application.</li> </ul>
	<ul> <li>EP25, EP33, and EP50: the EP (Equal Percentage) curves provide a larger travel only for wide set point variation.</li> </ul>
	<ul> <li>QO25, QO33, and QO50: the QO (Quick Open) curves provide a larger travel for narrow set point variation.</li> </ul>
CURVE BYPASS	enables/disables the curve.
CURVE LENGTH	indicates the number of points that will be used to define the curve.

After selecting the table, the user must type the input and output values in percentage.

To configure the points that define the characterization curve, click the link *Curve X/ Curve Y*, as indicated below:

	ADVANCED SETUP	
TSO	Set Point Limits	Flow Char
Final Value Cutoff Low 2 %	SP Lo Lim 0 % SP Hi Lim 100 %	Characterization Type Table 💌 Curve Bypass True 💌 Curve Lenght 10 CURVE X/ CURVE Y

Figura C.42

The table with the points will open:

Curve	X/ Curv	e Y -	FY-302-1
Cu	urveX (%)	Cu	rve¥ (%)
[1]	55	[1]	0
[2]	95	[2]	10
[3]	0 '	[3]	20
[4]	100	[4]	40
[5]	95	[5]	60
[6]	15	[6]	80
[7]	14	[7]	90
[8]	13	[8]	100
[9]	10	[9]	10
[10	] 11	[10]	0
	<u>0K</u>	<u>C</u>	LOSE

Figura C.43

Type the points of the curve and click *Ok* to send the values to the device. Click *Close* to close the table and return to the calibration page.

#### User Calibration

#### NOTE

Whenever the positioner is installed to a valve, it is necessary to execute the autocalibration procedure (setup) before connecting it to the process. The setup procedure will move the valve searching for the physical limits of the position.

The user must fix the positioner when the valve is isolated from the process and air is directly applied to it using a manual regulator. Match the arrow of the magnetic part with the arrow of the positioner transducer module when the valve is at 50.0%. This procedure is crucial for the properly operation of the positioner.

For further details consult the positioner manual.

The setup procedure is necessary even before the lower or upper position calibration.

LOWER POS CALIBRATION POINT: this method is used when the user wants to calibrate the 0 and the 100% limits differently from the physical limits set during the setup process.

Use this procedure in applications that involve Splitter Range conditions.

When this method is selected, a message box appears warning the user that this procedure must be executed when the process stops or the plant control is set at manual. Open and close movements may interfere in the process.

Lower Pos Calibration Point - FY-302-1		
This procedure must be executed offline or when the process stops, because valve movements can interfere in the plant operations.		
The valve will travel between the completely open point and the completely closed point to reach the best adjustment. This procedure will set the Mode Block of the Resource and the Transducer blocks to "Auto". AssetView will restore the Mode Block of these blocks to the previous value at the end of this		
procedure. The control loop must be in "Manual".		
<u>Ok</u> <u>Abort</u>		

Figure C.44

Click OK and complete the information about the calibration, indicating the location of the calibration, the date and the person responsible for the calibration:

Lower Pos Calibration Point - FY-302-1 Fill the field below:		
CAL_LOC		
CAL_WHO	juliana	
CAL_DATE	6/11/2004 10:54:13	
Ok	Abort	

Figure C.45

The valve will move to the lower position. The message shown in the figure below appears. Wait until the valve stabilizes the position.

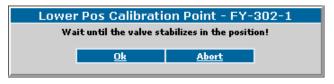


Figure C.46

Check the current physical position of the lower limit, which is indicated in the actuator scale, and type this value in the New Position text field:

Lower Pos Calibration Point - FY-302-1		
Type the position of the valve according to the scale of the actuator:		
New Position:		
<u>Ok</u>	<u>Abort</u>	

Figure C.47

Suppose that the value read in the actuator scale is 10.0%. Once the user types this value and click Ok, the positioner will correct the lower position (set at around 0%). After visual check, the user indicates whether the correction was successful or the calibration procedure must be executed again.

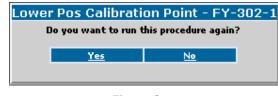


Figure C.48

If the correction was successful, click *No.* It is possible to save the calibration in the EEPROM memory of the positioner transducer module, which is recommended.

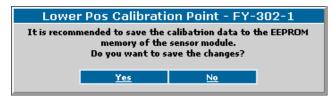


Figure C.49

Otherwise, if the calibration is not suitable, click Yes in the message showed in Figure C.48. The user can execute the correction. It is possible to "lie" to the positioner about the value read from the actuator scale. In this way, the positioner will be calibrated lower, according to the user necessities.

Negative values for the position will execute the correction in the opposite direction of the movement.

#### UPPER POS CALIBRATION POINT:

this method is similar to the *Lower Pos Calibration* procedure described above. It is used when the user wants to calibrate the 0 and the 100% limits differently from the physical limits set during the setup process.

Use this procedure in applications that involve Splitter Range conditions.

When this method is selected, a message box appears warning the user that this procedure must be executed when the process stops or the plant control is set at manual. Open and close movements may interfere in the process.

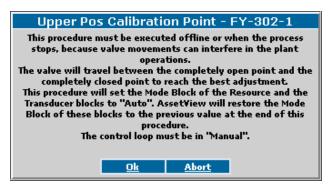


Figure C.50

Click *OK* and complete the information about the calibration, indicating the location of the calibration, the date and the person responsible for the calibration:

Upper Pos Calibration Point - FY-302-1 Fill the field below:		
CAL_LOC		
CAL_WHO	juliana	
CAL_DATE	6/11/2004 11:04:40	
<u>Ok</u>	<u>Abort</u>	

Figure C.51

The valve will move to the upper position. The message shown in the figure below appears. The user must wait until the valve stabilizes the position.

Upper Pos Calibration Point - FY-302-1			
Wait until the valve stabilizes in the position!			
<u>Ok</u> <u>Abort</u>			

Figure C.52

Check the current physical position of the upper limit, which is indicated in the actuator scale, and type this value in the *New Position* text field:

Upper Pos Calibration Point - FY-302-1 Type the position of the valve according to the scale of the actuator:			
New P	osition: [		
	<u>Ok</u>	Abo	<u>rt</u>

Figure C.53

Suppose that the value read in the actuator scale is 90.0%. Once the user types this value and click *Ok*, the positioner will correct the upper position (set at around 100%). After visual check, the user indicates whether the correction was successful or the calibration procedure must be executed again.

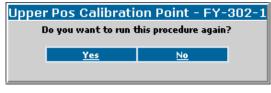


Figure C.54

If the correction was successful, click *No.* It is possible to save the calibration in the EEPROM memory of the positioner transducer module, which is recommended.

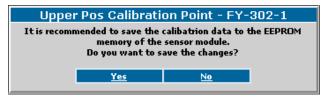


Figure C.55

Otherwise, if the calibration is not suitable click Yes in the message showed in Figure C.54. The user can execute the correction. It is possible to "lie" to the positioner about the value read from the actuator scale. In this way, the positioner will be calibrated higher, according to the user necessities.

Negative values for the position will execute the correction in the opposite direction of the movement.

**SETUP**: When this method is selected, a message box appears warning the user that this procedure must be executed when the process stops or the plant control is set at manual. Open and close movements may interfere in the process. Please refer to the positioner manual for setup details.

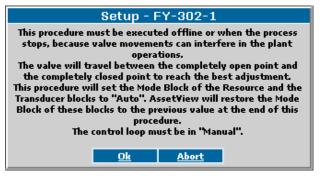


Figure C.56

Click *OK* and the valve will move searching for the lower and upper physical position. Depending on the valve inertia this process may take a few minutes.

	Setup	- FY-302-	1
Progress	0%	1 50%	100%
Valve Position	1	Abort	
		Status	
• Ma	ignet not Cent	ralized or not D	etected
• Slo	ow Valve Move	ment or Low Ai	
• Ba	se not Trimme	d	
• Ou	itput Module n	ot Initialized or	not Connected

Figure C.57

The progress bar indicates the percentage of this procedure. The user can also verify the setup status.

A message box will appear indicating that the Setup process is completed.



Figure C.58

At the end of the setup, it will be possible to save the data:

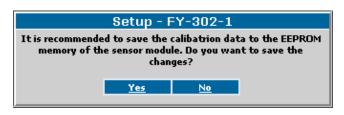


Figure C.59

**SETUP REPORT**: this option provides an analysis of the data stored during the last Setup process. The data has information about the HALL and the PIEZO sensors. It is useful to report a problem during the Setup process.

There are cases where the Setup process is executed and the valve is stuck or the input pressure is too low to allow the movement. In this case, the process will be finalized with "Time Out" and the lower and upper values of the HALL sensor will be practically the same, which indicates no movement.

Another example is the voltage condition of the PIEZO sensor that must be between 30 and 60V in a stable condition of a fixed position. If the voltage is out of this band the mechanical calibration will be necessary at the PIEZO sensor.



Figure C.60

Click Ok. The figure below shows the Setup Report options:

Setup Report - FY-302-1		
Pot DC	Digital Hall Value	
Value 100	Value	
DA Output Value	Piezo	
Value     16000       Highest Cal DA Value     12000       Lowest Cal DA Value     12000       Status     Good_NonCascade::NonSpecific:NotLimited	Values [100.5975] Status Good_NonCascade::NonSpecific:NotLimited	
Ok		

Figure C.61

#### Pot DC:

VALUE digital information of the hardware used to a	control the position.
---	-----------------------

#### Digital Hall Value:

VALUE	indicates the current value of the HALL sensor according to the current position.
HIGHEST CAL HALL VALUE	upper value of the HALL sensor calibrated during the <i>Setup</i> process or <i>Upper Pos Calibration</i> process.
LOWEST CAL HALL VALUE	lower value of the HALL sensor calibrated during the Setup process or Lower Pos Calibration process.

#### DA Output Value:

•	
VALUE	indicates the current value of the D/A converter.
HIGHEST CAL DA VALUE	upper value of the D/A converter calibrated during the <i>Setup</i> process or <i>Upper Pos Calibration</i> process.
LOWEST CAL DA VALUE	lower value of the D/A converter calibrated during the Setup process or Lower Pos Calibration process.
STATUS	status of the D/A converter value.

#### Piezo:

VALUE	indicates the value of the PIEZO sensor voltage.	
STATUS	indicates the status of the PIEZO sensor voltage.	

**PRESSURE SENSOR CALIBRATION**: selecting this method the user can calibrate the pressure sensors, when they are installed in the positioner. These installations depend on the positioner version.

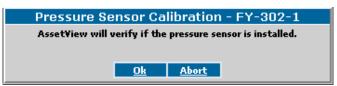


Figure C.62

Click OK and complete the information about the calibration, indicating the location of the calibration, the date and the person responsible for the calibration:

Pressure Sensor Calibration - FY-302-1		
Fill the field below:		
CAL_LOC		
CAL_WHO	juliana	
CAL_DATE	6/11/2004 11:40:47	
Ok	<u>Abort</u>	

Figure C.63

A message box appears warning the user that this procedure must be executed when the process stops or the plant control is set at manual. Open and close movements may interfere in the process.

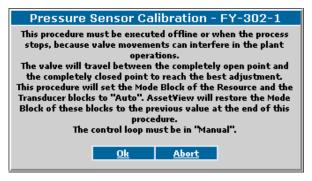


Figure C.64

Select the sensor that will be calibrated (Input, Output1 or Output2) and click Ok:

Pressure Sensor Calibration - FY-302-1	
Select the Pressure Sensor:	
Input	
<u>Ok</u>	

Figure C.65

Choose between upper calibration and lower calibration and click Ok:

Pressure Sensor Calibration - FY-302-1		
Select the Trim Point:		
Cal Point Hi 💌		

Figure C.66

The pressure of the sensor selected will be displayed according to the pressure measured. Click Yes to confirm if the pressure is correct:

Pressure S	ensor Ca	libration - F	Y-302-1
Pressure ¥alue	0		psi
Is this	value for th	e pressure corre	rt?
	<u>Yes</u>	No	

Figure C.67

If the user clicks *No* it will be necessary to indicate the pressure applied. Observe the values in the manometer of the positioner:

	sor Calibration - FY-302-1 e the pressure desired:
Pressure	psi
	<u>Ok</u>

Figure C.68

If the pressure is correct, the user will be asked to save the data in the transducer module:

Pressure Sensor Calibration - FY-302-1		
It is recommended to save the calibatrion data to the EEPROM memory of the sensor module. Do you want to save the changes?		
<u>Yes</u>	No	

Figure C.69

**TEMPERATURE CALIBRATION**: selecting this method the user can calibrate the temperature sensor. Click the *Temperature Calibration* option and the following message will appear:

Temperature Calibration - FY-302-1		
	re executes the re Calibration.	
<u>Ok</u>	<u>Abort</u>	

Figure C.70

Click *OK* and complete the information about the calibration, indicating the location of the calibration, the date and the person responsible for the calibration:

Temperature Calibration - FY-302-1 Fill the field below:		
CAL_LOC		
CAL_WHO	juliana	
CAL_DATE	6/11/2004 1:51:06 F	
<u>Ok</u>	<u>Abort</u>	

Figure C.71

Click *Ok* to initiate the calibration. The user will have to verify the value of the reference temperature for the device.

Temperature	e Calibration	n - FY-302-1
Temperature 2 Measured	6.71471	Undefined
	temperature cor <u>'es No</u>	

Figure C.72

If the temperature measured is correct, click Yes to complete the calibration procedure. If the temperature value indicated is not correct, click *No*. The dialog box will appear and the user can type the temperature value:

Temperature Calibration - FY-302-1			
¥alue			°C
Туре	e the value o	f the temperatu	e:
	<u>Ok</u>	<u>Cancel</u>	

Figure C.73

Click Ok to conclude the Temperature Calibration.

**LOOP TEST**: selecting this method, the user can verify the position desired according to a previous Set Point. The message box will appear instructing the user about the safe procedures:

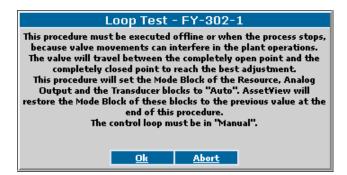


Figure C.74

Click Ok to initiate the process. Select the Set Point value and click Ok.

Loop Test - FY01_306
Select the value of the Set Point:
C 0% C 25% C 50% C 75%
C 100%
O Other %
EU100% EU100% Position: 1.#QNAN %

Figure C.75

The message shown below will open. Click Ok to proceed:



Figure C.76

Wait a few seconds for the valve position to be updated in the field Position.

Select another value for the Set Point to test the valve position again.

Click *Close* to conclude the test and the message will appear indicating to the user that the previous configuration will be restored.

Loop Test - FY-302-1			
The Mode Block of the Resource block, Transducer block and Analog Output block will be restored to the previous values.			
Pre	vious Value	Ad	tual Value
RES	Auto	RES	Auto
TRD	Auto	TRD	Auto
AO	Cas	AO	Manual
	_	ol	
		<u>Ok</u>	

Figure C.77

Click Ok to conclude.

DYNAMIC VALUES: selecting this method the user can verify the dynamic values of the device.

Dynamic Values - FY-302-1		
Set Point Final Value	Bad Communication	
Return Sensor Press In	Bad Communication Bad Communication	
Sensor Press Out1 Sensor Press Out2	Bad Communication Bad Communication	
Strokes Reversal	798	
Travel Piezo Analog	46.69144	
Secondary Value	Bad Communication	
	<u>Ok</u>	

Figure C.78

## FY302 Display Page

	<u></u>	P		
CALIBRATION CONFIGURATIO	DN DEVICE VIEW	DIAGNOSTIC	DISPLAY	IDENTIFICATION
DISPLAY		De	nufacturer: evice Type: evice Tag:	SMAR FY302 FY-302-1
	Device Opera	tion Mode		
OPERATION MO		lan 💌		
► LCD1      ► LCD2	/ue 2 LCD3	⊽ LCD5	<u>▽ LCD6   ▽ L</u>	.CD7
Block Tag 1		hoose: 💌		
Parameter 1 Sub Index 1 Mnemonic 1 Inc Dec 1 Decimal Point Numb 1 Access 1 Alpha Num 1	1	o 25 Ionitoring 💌 Inemonic 💌	] ] ]	
	Subm	it		

The user can configure the data shown in the device's display.

Figure C.79

### **Device Operation Mode**

Indicates the operation mode for the device:

00S	if this mode is selected, the value of the parameter <i>Mode Block</i> will be <i>Out of Service</i> for the <i>Resource</i> , <i>Transducer</i> and <i>Analog Output</i> blocks.
AUTO	if this mode is selected, the value of the parameter <i>Mode Block</i> will be <i>Auto</i> for the <i>Resource</i> , <i>Transducer</i> , <i>Display</i> and <i>Analog Output</i> blocks.
MAN	if this mode is selected, the value of the parameter <i>Mode Block</i> will be <i>Manual</i> for the <i>Analog Output</i> block, and <i>Auto</i> for the <i>Resource</i> , <i>Transducer</i> and <i>Display</i> blocks.
CAS	if this mode is selected, the value of the parameter <i>Mode Block</i> will be <i>Cas</i> for the <i>Analog Output</i> block, and <i>Auto</i> for the <i>Resource</i> , <i>Transducer</i> and <i>Display</i> blocks.

Display	
BLOCK TAG	shows the list of the tags for the instantiated blocks available.
PARAMETER	shows the list of parameters available to be displayed in the LCD for the block selected in the <i>Block Tag</i> option.
SUB INDEX	indicates the sub-index of the selected parameter.
MNEMONIC	indicates the mnemonic of the parameter selected in the <i>Parameter</i> option.
INC DEC	indicates the value to be added or subtracted when acting the parameter via local tuning.
DECIMAL POINT NUMB	indicates the digits to the right of the decimal point for the parameter being displayed in the LCD.
ACCESS	the user can select the type of access to the selected parameter: monitoring or action.
ALPHA NUM	indicates if the alphanumeric field will be used for the mnemonic or for the value.

### FY302 Device View Page

The user can monitor the device's data opening the Device View page.

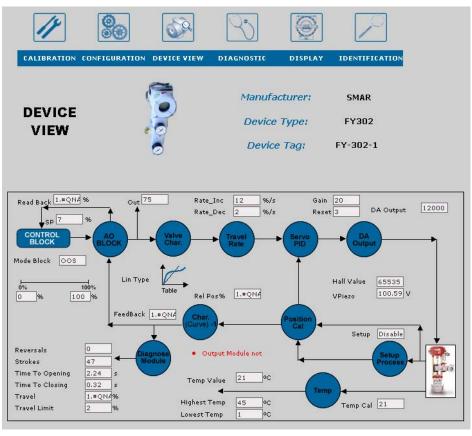


Figure C.80

### Diagnostic and Maintenance for Positioners

With *AssetView*, the user can take advantage of the digital information provided by the Fieldbus and Hart protocol.

The AssetView is a powerful tool for configuring the parameters of positioners and control valves, assisting the management of the control system and the predictive maintenance. It provides the information on the network, performance tests online (charts and trends), configuration/calibration for the positioners, performance monitoring and online diagnostics. The user can also analyze the data stored from several periods ("as found, as left"), reconciliate configurations according to the application needs, and print reports for later analysis.

With *AssetView*, the user can act and control the process stability and its variation by viewing the entire process control, then optimizing the use of devices and assuring a continuous improvement for the system operation. The main goals are to provide an low-cost maintenance, guarantee the continuous and operational functionality of the devices with performance levels accepted by the application process control, minimize the efforts for the corrective maintenance and adapt the system for a safe and reliable operational extension.

The use of the *AssetView* starts during the commissioning of the devices and the process startup, when the user creates the database to be used as reference. The initial database is periodically compared to the current data. In this initial process, the network tuning is optimized according to the processes. The charts and trends will be used. Monitoring the diagnostics online allows the user to easily detect the status of the positioners and the valves being monitored. In the Calibration page, the user can execute the *Auto Setup* and calibrate the position, assuring the operation performance of the positioners and the valves.

### Preventive and Predictive Maintenance for Positioners

The status of the positioners and valves must be followed periodically through the *Diagnostics Page*, for predictive maintenance purposes. The tracking can minimize maintenance costs, because the maintenance will focus on the devices that really need maintenance, and in that way it will be possible to plan and reduce the idle time of the plant. Configuring the process to manual or off-line, it is possible to monitor and test the performance to evaluate the general operation condition of the positioners and valves.

The service and the calibration of the positioners are executed to assure the precision and the best performance from the valves. These procedures are executed when the process stops or in Manual mode, and it is not necessary to remove the valves from the process. The analyses and the services suggested by the analysis results are reported right after the tests, and all of the results can be saved in the maintenance database. For example, the analysis can indicate valve struck.

After analyzing the tests, it is possible to create a time reference between the calibrations or maintenance of the positioners, actuators and valves. For the positioners, the tests may indicate the actions needed, such as gain adjustments, improvement of the air system or tune. The frequency criterion and the analyses system are essential for the information acknowledgement, so the information stored can be useful for the proactive maintenance.

After the calibration, it will be necessary to check the valve signature and verify the dynamic response. If the result is not acceptable, it will be necessary to analyze the valve/actuator and positioner/valve conditions to find the best parameterization.

If the control valves tested continue to report control problems, the valve designs should also be analyzed. The design will be based on the minimum, medium and extreme conditions of the process. This phase must be conducted by an application engineer or a technician.

The advantage of the digital technology is the qualitative information, not only the values of the process, added to the online monitoring of the valve operation conditions and to the online analysis of the performance curves and deviations.

The technology used in the FY302 positioner provides powerful diagnostic algorithms and, through *AssetView*, it also provides powerful resources for the predictive analyses.

The positioner has characterization resources (tables, QO and QE curves), input and output pressure monitoring, temperature monitoring, travel control, strokes control, reversals control, input signals, set point, deviation, etc. With *AssetView*, it is possible to view online diagnostics safely, without interrupting the process. It is possible to configure the travel limits, strokes, reversals, and alarms. The user can track the condition of the device and prevent problems in the process. The information are read and saved in the tool history for a specific configuration, helping to plan and execute the maintenance.

The AssetView can be accessed from anywhere because it was built on Web technology.

It is recommended to generate the charts before and after maintenance to register the status of the positioner, the valve, the actuator and the database. The database will be analyzed later to assist the user to decide the period of time needed between maintenances, delaying the following maintenance and reducing the idle time of the device.

### AssetView and the Proactive Maintenance

Because of the resources available in the positioner and the online monitoring, it is possible to implement the proactive maintenance, determining the problems and their causes. The diagnostic potential of the field devices allow monitoring and registering the conditions, such as valve wearing. Through the diagnostics, the plant technicians execute the proactive maintenance based on the online information, before the problem occurs, not waiting for the maintenance planned, avoiding and reducing the idle time of the plant.

The proactive maintenance in the FY302 is implemented by configuring the alarms in the FY302 *Configuration Page*, such as *Reversal*, *Deviation* and *Travel*.

After configuring the alarms, the user can view the alarms in the *FY302 Diagnostics Page* according to the previous configuration, such as *Reversal Limit Exceed*, *Deviation Limit Exceed* and *Travel Limit Exceed*. The alarms that were not configured by the user are also displayed in the *Diagnostics Page*, such as *Slow Valve Movement or Low Air Supply*, *Base not Trimmed*, *Output Module not Initialized or not Connected*, etc.

# D. ASSETVIEW & TT302

### TT302 Home Page

The figure below shows the TT302 initial page and its options:

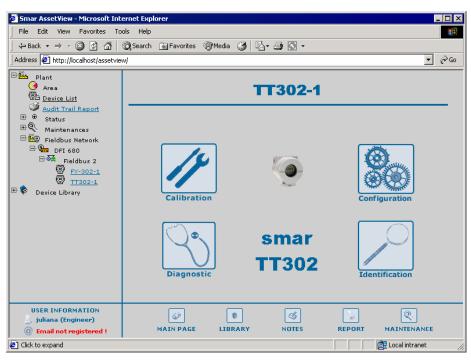


Figure D.1

The following sub-sections will describe each one of the pages developed for the *Device* maintenance.

### TT302 Identification Page

This page displays information relevant to the temperature transmitter. The user can easily identify and specify the transmitter in the physical plant.

	CALIBRATION CONFIGURATIO	IN DIAGNOSTIC IDENTIF	CATION
IDENTIFICA	TION 🧕	Manufacturer Device Type: Device Tag:	
	D	evice	
Tag Device ID Device Type Device Serial Number Device Revision Hardware Revision	TT302-1 0003020002:SMAR-TT302:00480 2 0 4 01060	Manufacturer Main Board Serial Number Firmware Revision DD Revision Ordering Code	Smar           4808288           3.46           2
	Sei	nsor 1	
Sensor Type Sensor Connection Sensor Serial Number	Pt 100 IEC Double two wires	Sensor Upper Range Sensor Lower Range Sensor Unit	850 -200 ©C
	Sei	nsor 2	
Sensor Type Sensor Connection	Pt 100 IEC	Sensor Upper Range Sensor Lower Range	850

Figure D.2

-	
Dev	/ICe

TAG	indicates the tag associated to the transmitter in the physical plant. The tag can use up to 32 characters.
DEVICE ID	indicates the identification code of the transmitter. This code can use up to 32 characters.
DEVICE TYPE	identifies the type of the transmitter for a specific manufacturer.
DEVICE SERIAL NUMBER	indicates the serial number of the transmitter.
DEVICE REVISION	indicates the revision of the transmitter.
HARDWARE REVISION	indicates the hardware revision of the transmitter.
MANUFACTURER	identifies the transmitter manufacturer.
MAIN BOARD SERIAL NUMBER	indicates the serial number of the main board.
FIRMWARE REVISION	indicates the software revision of the transmitter.
DD REVISION	indicates the revision of the DD.
ORDERING CODE	indicates the ordering code of the transmitter.

Sensor 1 and Sensor 2

SENSOR TYPE	indicates the type of the sensor.
SENSOR CONNECTION	indicates the number of wires used by the sensor.
SENSOR SERIAL NUMBER	indicates the serial number of the sensor.
SENSOR UPPER RANGE	indicates the upper range of the sensor.
SENSOR LOWER RANGE	indicates the lower range of the sensor.
SENSOR UNIT	indicates the unit of the sensor.

### TT302 Configuration Page

This page configures the sensor connected to the transmitter, the type of measurement and the working unit. Instead working with the *Primary Value* in temperature units, it is possible to work with percentage values. It is also possible to calibrate the transmitter with no reference.

The user can check the general diagnostic status in the *TT302 Diagnostic Page* (see the next section). This status is generated according to the user configuration in the *TT302 Configuration Page*.

14		P		<b></b>
CALIBRAT	TION CONFIGURATION	DIAGNOSTIC	IDENTIFICATION	RECONCILE
ONFIGURATI	on 🍥		Manufacturer: Device Type: Device Tag:	SMAR TT302 TT302-1
	Measu	rement Config	juration	
		Sensor 1		
Cold Junction Compensation PV unit PV Lower Range Value PV Upper Range Value	Enable -100 800 C	Measu EU uni EU 0% EU 10	t 🔍	
		Sensor 2		
Cold Junction Compensation PV unit PV Lower Range Value PV Upper Range Value	Enable • •C • •200 •C 850 •C	Measu EU uni EU 0% EU 10	t 🔍	00 °C
	Cont	figuration Met	hods:	
NUMBER OF TRANSDUCERS				CONFIGURATION CONFIGURATION
Submit				

Figure D.3

Measurement Configuration - Sensor 1 and Sensor 2
---

COLD JUNCTION COMPENSATION	enables the cold junction compensation for thermocouple sensors.
PV UNIT	unit of the process variable.
PV LOWER RANGE VALUE	lower limit of the process variable.
PV UPPER RANGE VALUE	upper limit of the process variable.
MEASUREMENT METHOD	the user selects the method of measurement (single or differential).
EU UNIT	engineering unit.
EU 0%	value of the temperature corresponding to 0%, in EU.
EU 100%	value of the temperature corresponding to 100%, in EU.

### **Configuration Methods**

NUMBER OF TRANSDUCERS: this method enables the transmitter to work with two independent sensors. If there is only one sensor, the transducer number will be one.



Figure D.4

After selecting the number of transducers, the message will appear confirming the configuration:



Figure D.5

SENSOR 1 CONFIGURATION: this method selects the type of the primary sensor and the number of wires. Select the type of the sensor and click Ok:

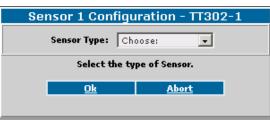


Figure D.6

Select the type of the connection:



Figure D.7

If there are two sensors, the "Double two wires" connection must be selected.

The message will appear confirming the configuration:

Microsoft	Microsoft Internet Explorer 🛛 🗙		
⚠	Sensor One has been configured.		
	ОК		

Figure D.8

SENSOR 2 CONFIGURATION: this method selects the type of the secondary sensor.

Sensor 2 Configuration - TT302-1			
Sensor Type: Choose:			
Select the type of Sensor.			
	<u>Ok</u>	<u>Abort</u>	

Figure D.9

The message will appear confirming the configuration:



Figure D.10

It will not be necessary to select the sensor connection because the only option available when using two sensors is the "Double two wires" connection.

### TT302 Diagnostics Page

This page displays the device status.

<b>//</b>	
CALIBRATION CONFIGUR	ATION DIAGNOSTIC IDENTIFICATION
DIAGNOSTIC	Manufacturer: SMAR Device Type: TT302 Device Tag: TT302-1
Device (	Configuration Status
<ul> <li>Hot Backup Activated</li> <li>Dual Sensor Activated</li> <li>Cold Junction Diactivated</li> </ul>	EEPROM Saving In Progress     Differential Sensor Activated     Two Wires Comp. Activated
De	vice Diagnostic
Pover-Up     Mamory Failure     Device Needs Maintenance Soon     Device Needs Maintenance Nov	Environment Temp Out Of Range     Software Error     Electronics Failure     General Error
Sen	sor 1 Diagnostic
<ul> <li>Input Failure</li> <li>Sensor Out Of Range</li> <li>Out Of Service</li> <li>Sensor Simulation Activated</li> </ul>	Calibration Error     Block Configuration Error     Data Integrity Error
Sen	sor 2 Diagnostic
Input Failure     Sensor Out Of Range     Out Of Service     Sensor Simulation Activated	<ul> <li>Calibration Error</li> <li>Block Configuration Error</li> <li>Data Integrity Error</li> </ul>

Figure D.11

### **Device Configuration Status**

HOT BACKUP ACTIVATED	indicates that the transmitter is operating with redundant sensors.
DUAL SENSOR ACTIVATED	indicates that the transmitter is operating with two independent sensors.
COLD JUNCTION DEACTIVATED	indicates that the compensation of the cold junction is deactivated for the thermocouple sensor.
EEPROM SAVING IN PROGRESS	indicates that data is being saved in the serial EEPROM memory.
DIFFERENTIAL SENSOR ACTIVATED	indicates that the differential measurement type is activated.
TWO WIRES COMPENSATION ACTIVATED	indicates that the compensation of the leads of the two wires sensor is activated.

### Device Diagnostic

POWER UP	indicates that the device has executed the power up procedure.
MEMORY FAILURE	indicates an electronic failure according to the internal checkup process, such as an incorrect checksum detected in the main memory.
DEVICE NEEDS MAINTENANCE SOON	the internal diagnostic according to the user configuration or device internal checkup has detected that the device will need maintenance soon.
DEVICE NEEDS MAINTENANCE NOW	the internal diagnostic according to the user configuration or device internal checkup has detected that the device needs maintenance.
ENVIRONMENT TEMP OUT OF RANGE	indicates that the temperature measured by the terminal temperature sensor is out of limits.
SOFTWARE ERROR	the software has detected an error that could have been caused by an improper interruption of a service routine, an arithmetic overflow, a watchdog timer, etc.
ELECTRONICS FAILURE	an electronic component has failed.
GENERAL ERROR	a general error related to the device has been detected.

### Sensor 1 Diagnostic and Sensor 2 Diagnostic

INPUT FAILURE	indicates that the sensor is broken or disconnected.
SENSOR OUT OF RANGE	indicates that the temperature value is out of range for the sensor.
OUT OF SERVICE	indicates that the function block is out of service.
SENSOR SIMULATION ACTIVATED	indicates that the temperature is tracked by a programmed value instead of the temperature measured.
CALIBRATION ERROR	indicates that an error occurred during the calibration of the device, or that a calibration error has been detected while operating the device.
BLOCK CONFIGURATION ERROR	indicates that there is an error related to the XD_SCALE parameter in the AI function block.
DATA INTEGRITY ERROR	indicates that data stored in the system may be no longer valid, for example, because the checksum of the data in the RAM memory has failed when compared to the data in the non-volatile memory.

### TT302 Calibration Page

This page displays configuration data used in the calibration procedures.

	DIAGNOSTIC IDENTIFICATION
CALIBRATION	Manufacturer: SMAR Device Type: TT302 Device Tag: TT302-1
	nformation
Calibration Information Last Calibration Type User trim standard calibration Sensor Calibration Information	Environment Temperature Information Temperature Unit Cold Junction Calibration Methods
Measurement Method     Process temperature       Calibration Unit     °C       Minimum Span     10     °C       Current Low Point Calibration     -100     °C       Current High Point Calibration     850     °C	LOWER POINT CALIBRATION UPPER POINT CALIBRATION LINE RESISTANCE COMPENSATION DYNAMIC VALUES
	nformation
Calibration Information	Environment Temperature Information Temperature Unit Cold Junction Enable
Sensor Calibration Information	Calibration Methods
Measurement Method     Process temperature       Calibration Unit     °C       Minimum Span     10     °C       Current Low Point Calibration     -200     °C       Current High Point Calibration     850     °C	LOWER POINT CALIBRATION UPPER POINT CALIBRATION LINE RESISTANCE COMPENSATION DYNAMIC VALUES

Figure D.12

### Sensor 1 Information and Sensor 2 Information

Displays the information for the respective sensor.

### Calibration Information

LAST CALIBRATION TYPE	indicates the method used in the last calibration.

### Environment Temperature Information

TEMPERATURE UNIT	set the unit of the terminal temperature sensor.
COLD JUNCTION	enable the cold junction compensation for the thermocouple sensors.

#### Sensor Calibration Information

MEASUREMENT METHOD	indicates the type of measurement.	
CALIBRATION UNIT	indicates the unit for the temperature calibration procedure.	
MINIMUM SPAN	indicates the minimum value allowed between the lower and upper points of the calibration.	
CURRENT LOW POINT CALIBRATION	indicates the last lower point of the temperature calibration.	
CURRENT HIGH POINT CALIBRATION	indicates the last higher point of the temperature calibration.	

#### **Calibration Methods**

LOWER POINT CALIBRATION: this method is used when calibrating the temperature with the user's reference instead of the manufacturer's reference.

When this method is selected, a message box appears warning the user to wait for the temperature to stabilize.

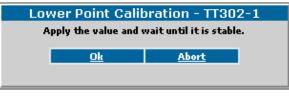


Figure D.13

Click OK and the temperature measured will be displayed.

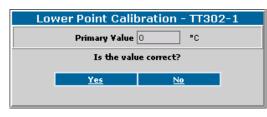


Figure D.14

If the value displayed is correct, click Yes to conclude this procedure. Otherwise, click No and type the temperature value:

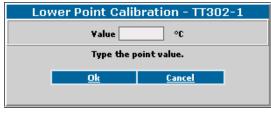


Figure D.15

Click OK to apply the new temperature value and then click Yes to confirm the alteration, as shown in Figure D.14.

**UPPER POINT CALIBRATION:** this method is similar to the *Lower Point Calibration* procedure described above. It is used when calibrating the temperature with the user's reference instead of the manufacturer's reference.

When this method is selected, a message box appears warning the user to wait for the temperature to stabilize.



Figure D.16

Click OK and the temperature measured will be displayed.

Upper Point Calibration - TT302-1		
Primary ¥alue	378.5561 °C	
Is the value correct?		
<u>Yes</u>	No	

Figure D.17

If the value displayed is correct, click Yes to conclude this procedure. Otherwise, click *No* and type the temperature value:

Upper	Upper Point Calibration - TT302-1		
Value C			
Type the point value.			
	<u>Ok</u>	<u>Cancel</u>	

Figure D.18

Click *OK* to apply the new temperature value and then click *Yes* to confirm the alteration, as shown in Figure D.17.

LINE RESISTANCE COMPENSATION:

this method is used to compensate the lead resistance when two sensors are connected.

It is necessary to short-circuit the sensor in the field to determine the total lead resistance.

Line Resistance Compensation - TT302-1				
Short-circuit the sensor in the field and click Ok.				
<u>Ok Abort</u>				

Figure D.19

After the procedure is completed, the sensor can be reconnected.



Figure D.20

Check if the temperature is correct:

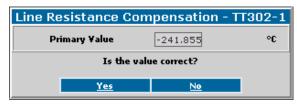


Figure D.21

If the value displayed is correct, click Yes to conclude this procedure. Otherwise, click *No* and execute the short-circuit procedure again.

DYNAMIC VALUES: this method displays the dynamic parameters of the respective sensor.

This procedure shows the dynamic parameters.	Dynamic Values - TT302-1		
	This procedure shows the dynamic parameters.		
<u>Ok</u> <u>Abort</u>		Abort	

Figure D.22

Click Ok to proceed. The following dialog box will display the values of the temperature and the sensor terminal temperature.

Dynamic Values - TT302-1		
Sensor 1		
Temperature	-241.854 °C	
Enviroment Temperature	26.94287 °C	
<u>Ok</u>		

Figure D.23

These values are not monitored continuously. The user will have to repeat this procedure to update the values.

## E. ASSETVIEW & LD302

### LD302 Home Page

The figure below shows the *LD302* initial page and its options:

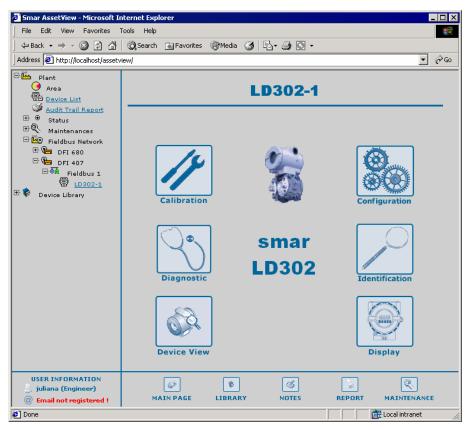


Figure E.1

The following sub-sections will describe each one of the pages developed for the *Device* maintenance.

### LD302 Identification Page

This page displays information relevant to the pressure transmitter. The user can easily identify and specify the transmitter in the physical plant.

14		<b>1</b>	<u>_</u>		
CALIBRATION	CONFIGURATION	DEVICE VIEW	DIAGNOSTIC D	ISPLAY	IDENTIFICATION
IDENTIFIC	ATION	*	Manufac Device Device	Type:	SMAR LD302 LD302-1
		Dev	vice		
Tag Device Type Device Serial Number Device Revision Hardware Revision	LD302-1 1 7194 4 00035		Device ID Manufacturer Main Board Serial Numbe Firmware Revision DD Revision Ordering Code	SMAR	20001:SMAR-LD302:00080
		Ser	isor		- 1
Sensor Type Sensor Fluid	Capacitance Inert		Sensor Range Code Sensor Isolation Materia Sensor Serial Number		2 (200 in H2O) Stainless_Steel
	Flange			Remote :	Seal
Flange Type Flange Material Drain / Vent Material O-Ring Material	Undefined Undefined Undefined Undefined		Number of Remote Seals Remote Seal Type Remote Seal Fluid Remoter Seal Isolation Material	Undef Undef Undef Undef	ined

Figure E.2

-	
Dev	vice

TAG	indicates the tag associated to the transmitter in the physical plant. The tag can use up to 32 characters.
DEVICE TYPE	identifies the type of the transmitter for a specific manufacturer.
DEVICE SERIAL NUMBER	indicates the serial number of the transmitter.
DEVICE REVISION	indicates the revision of the transmitter.
HARDWARE REVISION	indicates the hardware revision of the transmitter.
DEVICE ID	indicates the identification code of the transmitter. This code can use up to 32 characters.
MANUFACTURER	identifies the transmitter manufacturer.
MAIN BOARD SERIAL NUMBER	indicates the serial number of the transmitter main board.
FIRMWARE REVISION	indicates the firmware revision of the transmitter.
DD REVISION	indicates the revision of the DD.
ORDERING CODE	indicates the ordering code of the transmitter.

#### Sensor

SENSOR TYPE	indicates the sensor type of the transmitter.
SENSOR FLUID	indicates the fluid of the transmitter's sensor.
SENSOR RANGE CODE	indicates the range of the transmitter's sensor.
SENSOR ISOLATION MATERIAL	indicates the isolation material of the sensor.
SENSOR SERIAL NUMBER	indicates the sensor serial number of the transmitter.

#### Flange

FLANGE TYPE	indicates the type of the flange.
FLANGE MATERIAL	indicates the material of the flange.
DRAIN/VENT MATERIAL	indicates the material of the drain/vent.
O-RING MATERIAL	indicates the material of the o-ring.

#### Remote Seal

NUMBER OF REMOTE SEALS	indicates the number of remote seals.
REMOTE SEAL TYPE	indicates the type of the remote seal.
REMOTE SEAL FLUID	indicates the fluid of the remote seal.
REMOTE SEAL ISOLATION MATERIAL	indicates the isolation material of the remote seal.

### LD302 Configuration Page

There are some parameters in the LD302 transducer block that can be used in the predictive and proactive maintenance. It is possible to detect the performance decreasing by comparing the current parameters with the standard values and then schedule the maintenance.

The user can check the general diagnostic status in the *LD302 Diagnostic Page* (see the next section). This status is generated according to the user configuration in the *LD302 Configuration Page*. For example, there can be a "*Sensor Failure*" caused by an overpressure or a burnout sensor.

1/	<u>می</u>	S	<b>O</b>		+
CALIBRATION CONFIGURATI	DN DEVICE VIEW	DIAGNOSTIC	DISPLAY	IDENTIFICATION	RECONCILE
CONFIGURAT	ON		Manufactu Device Ty Device Ta	ipe: LD30	2
	Devi	ce Operation M	ode		
OPERATION		Auto 💌			
Measured Type       Choose: Pressure v       Measurement Configuration       Auto Zero     Off v					
			PV Unit PV Unit PV Lower Range PV Upper Range	mmHg (0	
1	Ale	ert Configuratio	n		
Maximum Offset Deviation			n Gain Deviation n Number of sure	5	
* Parameter not registered.		Submit			

Figure E.3

### **Device Operation Mode**

Indicates the operation mode for the device:

005	if this mode is selected, the value of the parameter <i>Mode Block</i> will be <i>Out of Service</i> for the <i>Resource</i> , <i>Transducer</i> and <i>Analog Output</i> blocks.
AUTO	if this mode is selected, the value of the parameter <i>Mode Block</i> will be <i>Auto</i> for the <i>Resource</i> , <i>Transducer</i> , <i>Display</i> and <i>Analog Output</i> blocks.
MAN	if this mode is selected, the value of the parameter <i>Mode Block</i> will be <i>Manual</i> for the <i>Analog Output</i> block, and <i>Auto</i> for the <i>Resource</i> , <i>Transducer</i> and <i>Display</i> blocks.

### Measured Type

Select the type of the measured variable:

LEVEL	indicates the transmitter is measuring the level.	
PRESSURE	indicates the transmitter is measuring the pressure.	
FLOW	indicates the transmitter is measuring the flow.	

Measurement Configuration

AUTO ZERO	flag that enables and disables the zero cutoff.
CHARACTERIZATION	flag that enables and disables the pressure characterization.
FUNCTION	indicates the function that acts in the <i>Primary Value</i> : <i>Linear</i> or <i>Table</i> .
LOW CUT OFF	indicates the value of the pressure cutoff. If the pressure value is lower than the value indicated by <i>Low Cur Off</i> , zero ("0") will be displayed.
EU UNIT	engineering unit.
EU 0%	value of the pressure corresponding to 0%, in EU.
EU 100%	value of the pressure corresponding to 100%, in EU.
PV UNIT	unit of the process variable.
PV LOWER RANGE VALUE	lower limit of the process variable.
PV UPPER RANGE VALUE	upper limit of the process variable.

### Alert Configuration

MAXIMUM OFFSET DEVIATION	indicates the maximum offset deviation that occurs before the alarm goes off.
OVERPRESSURE LIMIT	limit for the overpressure.
MAXIMUM GAIN DEVIATION	indicates the maximum gain deviation that occurs before the alarm goes off.
MAXIMUM NUMBER OF OVERPRESSURE	indicates the maximum number of overpressure that occurs before the alarm goes off.

### LD302 Diagnostics Page

The user can check the general diagnostic status in the LD302 Diagnostic Page.

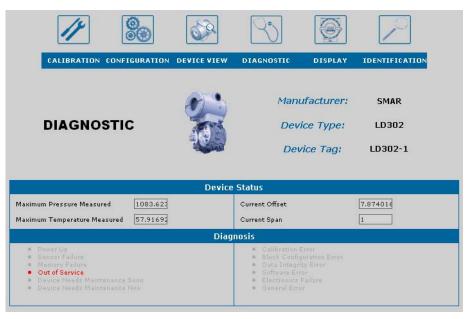


Figure E.4

#### **Device Status**

MAXIMUM PRESSURE MEASURED	maximum pressure measured in the sensor.
MAXIMUM TEMPERATURE MEASURED	maximum temperature measured in the sensor.
CURRENT OFFSET	current offset of the calibration curve.
CURRENT SPAN	current span of the calibration curve.

#### Diagnosis

Shows the status of the continuous diagnostic for the device, including the condition of the function block, the electronic module and the sensor.

POWER UP	indicates that the device has executed the power up procedure.
SENSOR FAILURE	indicates a failure in the sensor, such as burnout or overpressure.
MEMORY FAILURE	indicates an electronic failure according to the internal checkup process, such as an incorrect checksum detected in the main memory.
OUT OF SERVICE	indicates that the function block is out of service.
DEVICE NEEDS MAINTENANCE SOON	the internal diagnostic according to the user configuration or device internal checkup has detected that the device will need maintenance soon. This diagnostic is related to overpressure in the sensor.
DEVICE NEEDS MAINTENANCE NOW	the internal diagnostic according to the user configuration or device internal checkup has detected that the device needs maintenance. This diagnostic is related to the sensor of the calibration.

CALIBRATION ERROR	indicates that an error occurred during the calibration of the device, or that a calibration error has been detected while operating the device.
BLOCK CONFIGURATION ERROR	indicates that there is an error related to the XD_SCALE parameter in the AI function block.
DATA INTEGRITY ERROR	indicates that data stored in the system may be no longer valid, for example, because the checksum of the data in the RAM memory has failed when compared to the data in the non-volatile memory.
SOFTWARE ERROR	the software has detected an error that could have been caused by an improper interruption of a service routine, an arithmetic overflow, a watchdog timer, etc.
ELECTRONICS FAILURE	an electronic component has failed.
GENERAL ERROR	a general error related to the device has been detected.

### LD302 Calibration Page

This page displays configuration data used in the calibration procedures.



Figure E.5

#### Pressure Calibration Information

CALIBRATION UNIT	indicates the unit for the pressure calibration procedure.	
SENSOR LOWER RANGE LIMIT	indicates the lower limit for the sensor.	
SENSOR UPPER RANGE LIMIT	indicates the upper limit for the sensor.	
MINIMUM SPAN	indicates the minimum value allowed between the lower and upper points of the calibration.	

CURRENT LOW POINT CALIBRATION	indicates the last lower point of the pressure calibration.	
CURRENT HIGH POINT CALIBRATION	indicates the last higher point of the pressure calibration.	
FACTORY LOW POINT CALIBRATION	indicates the last lower point of the pressure calibration according to the manufacturer's procedure.	
FACTORY HIGH POINT CALIBRATION	indicates the last higher point of the pressure calibration according to the manufacturer's procedure.	

#### **Temperature Calibration Information**

CALIBRATION UNIT	indicates the unit for the temperature calibration procedure.
CALIBRATION TEMPERATURE	indicates the value of the last calibration of the temperature.

### **Calibration Methods**

NOTE
When the transmitter is installed, it is recommended to run the <i>Lower Pressure Calibration</i> procedure to minimize the mounting. Please refer to the transmitter manual for further details.

LOWER PRESSURE CALIBRATION: this method is used when calibrating the lower pressure point. The user can select the calibration unit and type the value of the pressure applied as a reference value to the transmitter, observing the sensor limits and the minimum span.

When this method is selected, a message box appears warning the user that this procedure must be executed when the process stops or the plant control is set to manual.

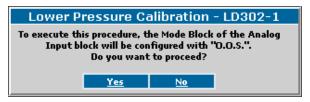


Figure E.6

Click Yes, apply the pressure and wait for the sensor to stabilize.

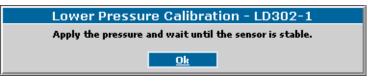


Figure E.7

Click OK and the pressure measured will be displayed.

Lower Pressure Calibration - LD302-1		
Preassure Measured	0	mmH2O (68°F)
Is the pressure correct?		
Yes <u>No</u>		

Figure E.8

If the value displayed is correct, click Yes to conclude this procedure. Otherwise, click *No* and type the pressure value:

Lower Press	Lower Pressure Calibration - LD302-1		
¥alue		mmH2O (68° F)	
Type t	Type the value of the pressure.		
	<u>Ok (</u>	ancel	

Figure E.9

Click *OK* to apply the new pressure value and then click *Yes* to confirm the alteration, as shown in Figure E.8.

**UPPER PRESSURE CALIBRATION**: this method is similar to the *Lower Pressure Calibration* procedure described above. It is used when calibrating the pressure with the user's reference instead of the manufacturer's reference.

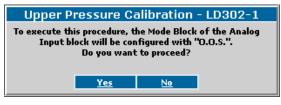


Figure E.10

Click Yes, apply the pressure and wait for the sensor to stabilize.

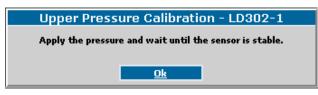


Figure E.11

Click OK and the pressure measured will be displayed.

Upper Pre	essure C	alibration - LD302-1
Preasu Measu		mmH2O (68°F)
Is the pressure correct?		
	Yes	No

Figure E.12

If the value displayed is correct, click Yes to conclude this procedure. Otherwise, click No and type the pressure value:

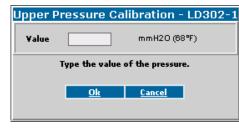
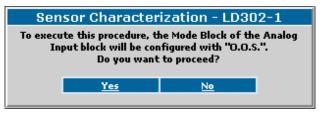


Figure E.13

Click *OK* to apply the new pressure value and then click *Yes* to confirm the alteration, as shown in Figure E.12.

**SENSOR CHARACTERIZATION:** this method is used to correct the sensor reading in several points. Use a pressure source accurate and stable, such as a dead-weight tester, to guarantee the accuracy to be at least three times better than the transmitter accuracy.





Click Yes and wait for the pressure to stabilize before performing the trim. The characteristic curve of the sensor can be slightly nonlinear at a certain temperature and for certain ranges. This nonlinearity can be corrected by the *Characterization Trim*. The user can characterize the transmitter with the operating range to obtain a better accuracy. The characterization is determined from two up to five points.

Apply the pressure to the transmitter:



Figure E.15

The pressure measured will be displayed. Click Ok if the pressure is stable.

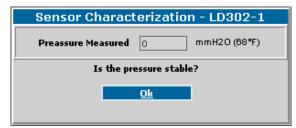


Figure E.16

Type the value of the pressure that is being applied and click Ok:

Sensor Characterization - LD302-1						
¥alue		mmH2O (68°F)				
Type the co	Type the correct value for the pressure.					
	<u>Ok</u>					

Figure E.17

Apply the pressure for the second point:

Sensor Characterization	- LD302-1
Apply the pressure in the second lo wait until the sensor is sta	
<u>Ok</u>	

Figure E.18

The pressure measured will be displayed:

Sensor Characterization - LD302-1						
Preassure Measured 0 mmH2O (68°F)						
Is the pr	Is the pressure stable?					
<u>Ok</u>						

Figure E.19

Type the value of the pressure and click *Ok*:

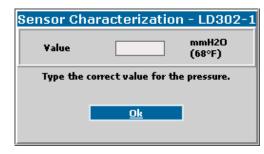


Figure E.20

To calibrate another point, click Yes in the following box and repeat the procedure described above for the first point. Otherwise, click *No* to conclude.

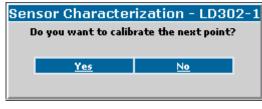


Figure E.21

TEMPERATURE CALIBRATION: this method is used to calibrate the temperature sensor.

Temperature Calibration - LD302-1				
To execute this procedure, the Mode Block of the Analog Input block will be configured with "O.O.S.". Do you want to proceed?				
Yes <u>No</u>				

Figure E.22

Click Yes, apply the temperature and wait for the sensor to stabilize.



Figure E.23

Click Ok to start the calibration. The temperature measured will be displayed:

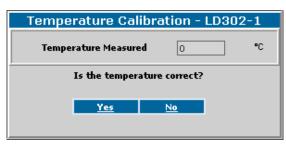


Figure E.24

If the value displayed is correct, click Yes to conclude this procedure. Otherwise, click *No* and type the temperature value:

Temperature Ca	libration - LD302-1				
VALUE	•C				
Type the value of the temperature.					
Type the value	of the temperature.				
Type the value <u>Ok</u>	of the temperature. <u>Cancel</u>				

Figure E.25

Click OK to apply the new temperature value and then click Yes to confirm the alteration, as shown in Figure E.24.

DYNAMIC VALUES: this method displays the dynamic parameters of the sensor.

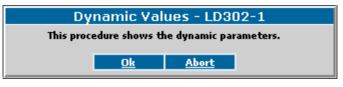


Figure E.26

Click Ok to proceed. The following dialog box will display the values of the temperature and the sensor terminal temperature.

Dynamic Values - LD302-1					
PRESSURE MEASURED	0 mmH2O (68°F)				
TEMPERATURE MEASURED	0 °C				
Ok					



The Measured Pressure indicates the value of the pressure measured by the sensor.

These values are not monitored continuously. The user will have to repeat this procedure to update the values.

### LD302 Display Page

The user can configure the data shown in the device's display.

·/ @®	2	S	Ì	$\square$
LIBRATION CONFIGURATI	DN DEVICE VIEW	DIAGNOSTIC	DISPLAY	IDENTIFICATION
DISPLAY		Ľ	lanufacturer: Device Type: Device Tag:	SMAR LD302 LD302-1
	Device Ope	unting Made		_
OPERATION I	r Value d	Other V		
Paramete Fie Minemo Field ▼ LCD1 ▼ LCD2	fODE NOTE r Value d nic 	Other 💽	⊽ LCD6 ⊽	LCD7
Paramete Field ▼ LCD1 ▼ LCD2 Block Tag 1	10DE NOTE 17 Value d	Other	]⊽ LCD6 ]⊽	LCD7
Paramete Fie Minemo Field ▼ LCD1 ▼ LCD2	fODE NOTE r Value d nic ] ▽ LCD3 ] ▽ LC [choose:	Other 💽	]⊽ LCD6 ]⊽	LCD7
► LCD1 ► LCD2  Block Tag 1 Parameter 1	fODE NOTE r Value d nic 	Other 💽	J⊽ LCD6 ⊽	LCD7
► LCD1 ♥ LCD2  Block Tag 1 Parameter 1 Sub Index 1	fODE NOTE r Value d mc v LCD3 v LC choose: 2	Other 💽	]⊽ LCD6 ]⊽	LCD7
► LCD1 ⊂ LCD2  Block Tag 1 Parameter 1 Sub Index 1 Mnemonic 1	fode Note r Value d D Choose: 2 P_VAL	Other 💽	]⊽ LCD6 ]⊽	LCD7
	fode Note	Other ▼ D4 ♥ LCD5	\⊽ LCD6 \⊽	LCD7

Figure E.28

### **Device Operation Mode**

Indicates the operation mode for the device:

OOS	if this mode is selected, the value of the parameter <i>Mode Block</i> will be <i>Out of Service</i> for the <i>Resource</i> , <i>Transducer</i> and <i>Analog Output</i> blocks.
AUTO	if this mode is selected, the value of the parameter <i>Mode Block</i> will be <i>Auto</i> for the <i>Resource</i> , <i>Transducer</i> , <i>Display</i> and <i>Analog Output</i> blocks.
MAN	if this mode is selected, the value of the parameter <i>Mode Block</i> will be <i>Manual</i> for the <i>Analog Output</i> block, and <i>Auto</i> for the <i>Resource</i> , <i>Transducer</i> and <i>Display</i> blocks.
CAS	if this mode is selected, the value of the parameter <i>Mode Block</i> will be <i>Cas</i> for the <i>Analog Output</i> block, and <i>Auto</i> for the <i>Resource</i> , <i>Transducer</i> and <i>Display</i> blocks.

### Display

BLOCK TAG	shows the list of the tags for the instantiated blocks available.
PARAMETER	shows the list of parameters available to be displayed in the LCD for the block selected in the <i>Block Tag</i> option.

SUB INDEX	indicates the sub-index of the selected parameter.
MNEMONIC	indicates the mnemonic of the parameter selected in the <i>Parameter</i> option.
INC DEC	indicates the value to be added or subtracted when acting the parameter via local tuning.
DECIMAL POINT NUMB	indicates the digits to the right of the decimal point for the parameter being displayed in the LCD.
ACCESS	the user can select the type of access to the selected parameter: monitoring or action.
ALPHA NUM	indicates if the alphanumeric field will be used for the mnemonic or for the value.

### LD302 Device View Page

The user can monitor the device's data opening the Device View page.

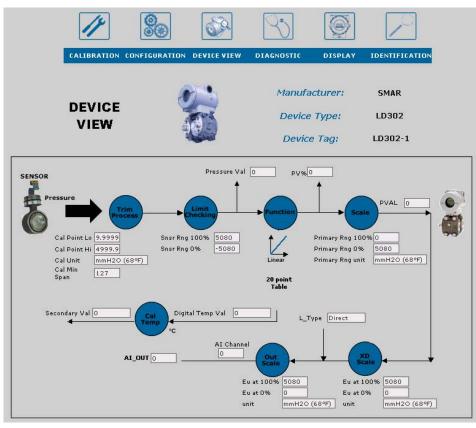


Figure E.29

## F.ASSETVIEW & DT301

### DT301 Home Page

The figure below shows the **DT301** initial page and its options:

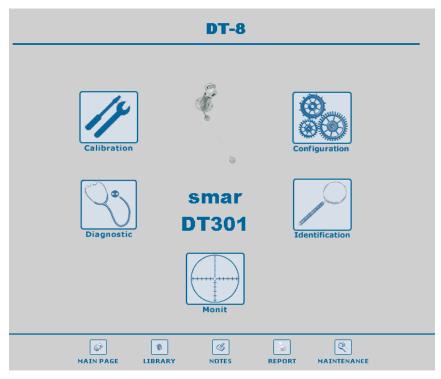


Figure F.1

The following sub-sections will describe each one of the pages developed for the *Device* maintenance.

NOTE
Remember that <i>AssetView</i> monitors HART instruments through Smar's HI302 (HART/Foundation Fieldbus Interface). It is necessary to update the HI302 firmware version to 0301 (3.15 or higher) and create the blocks configuration for the HI302. Please refer to the <i>HI302 User's Manual</i> (Chapter 3) for further information

### DT301 Identification Page

This page displays information relevant to the density transmitter. The user can easily identify and specify the transmitter in the physical plant.

					MONIT	)
IDENTI	FICATION	<i>E</i>	OSTIC	Manufactu Device Ty Device Ti	irer: 'pe:	SMAR DT301 DT-8
		De	vice			
Tag Descriptor Message Date Manufacturer Device Type Device ID Hart Polling Address Write Protect Mode	DT-8 16 CHARACTERS 32 CHARACTERS [Mon] May 16,2005 C SMAR 6 03 5B 42 0 Disabled	] ] ] ] ] ]	Sensor : Firmwar Hardwar Orderin Hart Rev		00 00 0 03 5B 4 36 0 DT3011 5 3 Installe	12 111A10141
		Prob	e Info			
Flange Type Probe Material O-Ring Material Installation Type	undefined 316 SST Buna-N undefined				Industri None None Rng1: 0	ial

Figure F.2

Device	
TAG	indicates the tag associated to the transmitter in the physical plant. The tag can use up to 8 characters.
DESCRIPTOR	16-characters field for additional identification of the transmitter. It can be used to identify a location or a service.
MESSAGE	32-characters field for any other information, such as the name of the responsible for the last calibration, specific prodecures, etc.
DATE	identifies a relevant date, such as the last calibration, the next calibration or the installation date. The date is stored as bytes: DD = $[1,31]$ , MM = $[112]$ , YY = $[0255]$ , where the effective year is calculated by [Year = $1900 + YY$ ].
MANUFACTURER	identifies the transmitter manufacturer.
DEVICE TYPE	identifies the type of the transmitter for a specific manufacturer.
DEVICE ID	indicates the identification code of the transmitter. This code can use up to 32 characters.
HART POLLING ADDRESS	indicates the transmitter's address in multidrop mode (0 to 15) or controller mode (0).
WRITE PROTECT MODE	indicates if the transmitter is protected from writing.
DEVICE SERIAL NUMBER	indicates the serial number of the transmitter.
SENSOR SERIAL NUMBER	indicates the serial number of the sensor.
FIRMWARE REVISION	indicates the firmware revision of the transmitter.
L	1

### Device

HARDWARE REVISION	indicates the hardware revision of the transmitter.
ORDERING CODE	indicates the ordering code of the transmitter.
HART REVISION	indicates the HART protocol revision used in the transmitter.
SPECIFIC REVISION	indicates the specific revision of the instrument.
DISPLAY	indicates if the display is installed in the instrument.

#### Probe Info

FLANGE TYPE	indicates the type of the flange.
PROBE MATERIAL	indicates the material in the probe.
O-RING MATERIAL	indicates the type of material for the o-ring.
INSTALLATION TYPE	indicates the installation type: top mounting (direct) or side mounting (reverse).
PROBE TYPE	indicates the probe type: sanitary or industrial.
PROBE FLUID	indicates the fluid used in the probe.
DIAPHRAGM MATERIAL	indicates the type of the material that composes the diaphragm.
ELECTRICAL CONNECTION	indicates the type of the electrical connection.
RANGE	indicates the reading range of the probe.

### DT301 Configuration Page

The Smart Density Transmitter DT301 has a very comprehensive set of HART commands that allow the user to access any implemented functionality. The DT301 configuration page allows the user to configure parameters such as input limits, work range, linearization table, etc.

1		$\square$		<b>→→</b>
CALIBRATION CON	ION	Manu Devi	facturer: ce Type: ice Tag:	SMAR DT301 DT-8
Device Co Fail Safe Mode Damping Write Protect Activate Measurement Installation Temp Unit	nfiguration Low v 0 s Disabled v Poly v kg/m3 v Direct v °C v	Upper Limit Lower Limit AS 0 AS 1 AS 2 AS 3 AS 4 AS 5	Polynomial 99 1 2 1 1 1 1 1 1 1 1 1 1 1 1	
DISPLAY 1st DISPLAY 2nd LCD-DISPLAY	Indic PV(%) • TEMP • Installed •	4.0 mA 20.0 mA PV OUT mA	Range	kg/m3 kg/m3 3E+07 kg/m3 mA
Concentratio       K-D     2       U.T.     2       c     2       2     2       4     2       6     2       8     2       10     2       12     2       14     2       16     2	K-T         2           U.D.         2           Ks/m3         2           L.D.         2           3         2           5         2           7         2           9         2           11         2           13         2           17         2	Number of Valid Points           X1         2           X2         2           X3         2           X4         2           X5         2           X6         2           X7         2           X8         2           X9         2           X11         2           X12         2           X13         2           X14         2           X15         2           X16         2	Table Settings           3           9           10           11           12           13           14           15           10           11           11           12           13           14      <	
	1	Submit		

Figure F.3

### **Device Configuration**

0	
FAIL SAFE MODE	indicates the transmitter action when the instrument is on fail safe mode (in case there is a fail).
DAMPING	the <i>damping</i> is a digital filter that adjusts the time constant between 0 and 32 seconds.
WRITE PROTECT	indicates if the transmitter is protected from writing.
ACTIVATE	activates the polynomial or the linearization table.
MEASUREMENT	indicates the measurement unit.
INSTALLATION	indicates the installation type: top mounting (direct) or side mounting (reverse).
TEMP UNIT	indicates the temperature unit defined by the user.

#### Polynomial

UPPER LIMIT	indicates the upper limit of the polynomial.
LOWER LIMIT	indicates the lower limit of the polynomial.
AS 0 AS 5	defines the parameters values of the polynomial.

### LCD Indic

DISPLAY 1ST	indicates the first variable selected by the user.
DISPLAY 2ND	indicates the second variable selected by the user.
LCD DISPLAY	indicates if the display is installed in the instrument.

### Range

4.0 mA	indicates the lower limit for the reading range.
20.0 mA	indicates the upper limit for the reading range.
PV	process variable.
OUT mA	process variable in mA.

#### **Concentration Parameters**

К-Т	temperature constant.
U-T	temperature upper limit.
L-T	temperature lower limit.
K-D	density constant.
U-D	density upper limit.
L-D	density lower limit.
0 17	polynomial parameters (Conc.).

### Table Settings

NUMBER OF VALID POINTS	defines the number of points used in the user table.
(Xi,Yi)	values of the table points. This value must be in percentage.

### DT301 Diagnostics Page

The user can check the general diagnostic status in the DT301 Diagnostic Page.



Figure F.4

#### **Device Status**

POWER UP	indicates that the device has executed the power up procedure.
DEVICE MALFUNCTION	indicates a failure in the sensor or the sensor is disconnected.
CONFIGURATION CHANGED	indicates that parameters of the transmitter were altered.
ANALOG OUTPUT SATURATED	indicates the pressure is out of the limits of the calibrated values or at burn-out (output current at 3,90 or 21,00 mA).
PV OUT OF LIMITS	indicates the pressure is out-of-limits, the sensor is damaged, the sensor module is not connected, or the transmitter has a false configuration.
TEMPERATURE OUT OF LIMITS	indicates the temperature is out-of-limits.
OUTPUT CURRENT FIXED	indicates the output is in constant mode or the transmitter is in multidrop mode.

### DT301 Calibration Page

This page displays configuration data used in the calibration procedures.



#### **Calibration Methods**

SET CONSTANT GL	constant that defines the local gravity acceleration where the instrument is installed.

**OUTPUT CURRENT TRIM**: when the microprocessor generates a 0% output signal, the Digital/Analog converter and the components associated provides a 4mA output. If the signal is 100%, the output should be 20mA. There might be a slight difference between the Smar's current standards and the plant current standard. In this case, follow the steps described below to adjust the current.



Figure F.6

Make sure the transmitter is off-line. Click Ok.



Figure F.7

Connect the multimeter to the test point. Click Ok to continue.

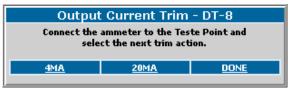


Figure F.8

Connect the ammeter to the test point and select the value of the current that will be calibrated.

The current measured will be displayed:

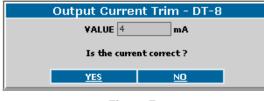


Figure F.9

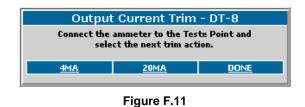
If the value displayed is correct, click Yes to conclude this procedure. Otherwise, click No and type the current value:

Output Current Trim - DT-8		
Type the value of the current:		
VALUE mA		
<u>OK</u>		

Figure F.10

Click *OK* to apply the new current value and then click Yes to confirm the alteration, as shown in Figure F.9.

The user can select another current calibration, as showed in the figure below. Select the current value and repeat the steps described above, or click *Done* to conclude the output current calibration procedure.



**TEMPERATURE CALIBRATION**: this method is used to calibrate the temperature sensor.

Wait until the temperature stabilizes and click Ok.

Temperature Calibration - DT-8				
Wait until the temperature is stable.				
<u>OK ABORT</u>				
	ABORT			

Figure F.12

The temperature measured will be displayed:

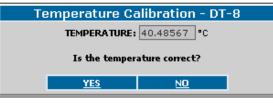


Figure F.13

If the value displayed is correct, click Yes to conclude this procedure. Otherwise, click No and type the temperature value:

Temperature Calibration - DT-8				
Type the value of the temperature:				
VALUE °C				
	<u>ok</u>	<u>CANCEL</u>		

Figure F.14

Click *OK* to apply the new temperature value and then click *Yes* to confirm the alteration, as shown in Figure F.13.

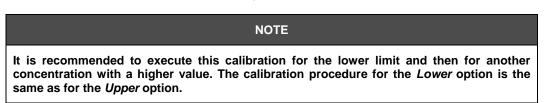
**CONCENTRATION CALIBRATION:** this method is used to calibrate measurements from the DT301 related to the users standard, that is, to calibrate the concentration or density the user must inform the transmitter the value of the concentration or density that the DT301 should read when in contact with the solution.

It is recommended to use at least two standards: one standard shows the lower concentration and the other, the upper concentration.

Set the DT301 in contact with the standard solution and wait until the value measured is stable. Select the calibration range for the solution where the DT301 is submerged.

Concentration Calibration - DT-8					
Select the next trim action!					
LOWER UPPER ABORT					

Figure F.15



Wait until the DT301 is stable and click Ok to proceed.

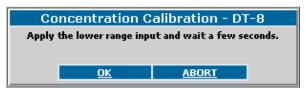


Figure F.16

The density value will be displayed:

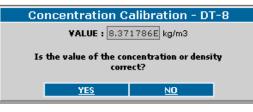


Figure F.17

If the value displayed is correct, click Yes to conclude this procedure. Otherwise, click *No* and type the density value that the DT301 should have read:

Concentration Calibration - DT-8					
Do you want to change the reference value?					
NEW VALUE: kg/cm3					
YES NO					

Figure F.18

Click Yes to apply the changes or click No and the value won't be updated.

Click Yes to confirm the density value, as showed in Figure F.17.

The correct value of the density or concentration will be displayed. In case it is not correct, repeat this calibration procedure.

To alter the calibration unit, for example using Brix degree, the user must change the parameter **Measurement** in the DT301 configuration page.

**SELF CALIBRATION**: this method calibrates the transmitter using the air density or the water density in Brix degree as a reference. According to the measurement parameter configured: if it is air, the unit kg/m3 must be configured; if it is water, select the unit Brix.



Figure F.19

Select the variable to be calibrated. Notice that the test point must be in contact with the selected element.



Figure F.20

Click Ok to continue. The calibration error will be displayed:

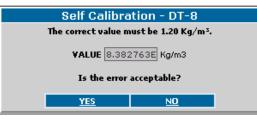


Figure F.21

If the error is acceptable, click Yes to conclude the procedure. Otherwise, click No to read the value again.

Repeat this step until the error is acceptable and then click Yes to conclude.

If the user selectes the water, the dialog box below will open before starting the calibration to alert the user that the variable unit must be Brix degree. To change the unit, open the DT301 configuration page and edit the parameter **Measurement**.

Self Calibration - DT-8				
The unit must be Brix.				
ΟΚ				

Figure F.22

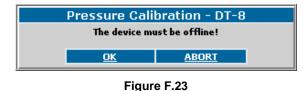
The calibration steps are the same as described for the air, but the Brix degree value in the water is always zero.

**PRESSURE CALIBRATION**: this method corrects any distortions that have occurred in the sensor's mechanical gain, acting on the transference curve span. The upper pressure adjustment is identical to the lower pressure, except for the reference point. The user can select the calibration unit and type the value of the pressure that will be used as a reference value for the transmitter, respecting the range limit of the sensor and the minimum span.

#### OBSERVAÇÃO

A specific device must be used to apply the pressure.

The transmitter must be in off-line mode.



Click Ok and select the value to be calibrated:



Figure F.24

Apply the input value and wait until the transmitter is stable:



Figure F.25

Click *OK* and the pressure will be displayed.

Pressure Calibration - DT-8						
PRESSURE 0.6145246 mmH2O						
Is the pressure correct?						
YES NO						

Figure F.26

If the value displayed is correct, click Yes to conclude this procedure. Otherwise, click *No* and type the pressure value:

Pressure Calibration - DT-8					
Type the value of the pressure:					
WALUE mmH20					
<u>OK</u> <u>CANCEL</u>					

Figure F.27

Click *OK* to apply the new pressure value and then click Yes to confirm the alteration, as shown in Figure F.26.

### DT301 Monitoring Page

This page displays the parameters and monitoring data of the density transmitter.

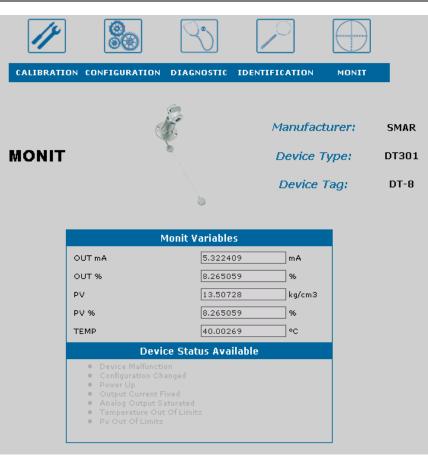


Figure F.28

#### Monit Variables

OUT mA	output value in mA.
OUT %	output value in percentage.
PV	process variable.
PV %	value of the process variable, in percentage.
ТЕМР	temperature value.

#### Device Status Available

DEVICE MALFUNCTION	indicates a failure in the sensor or the sensor is disconnected.
CONFIGURATION CHANGED	indicates that parameters of the transmitter were altered.
POWER UP	indicates that the device has executed the power up procedure.
OUTPUT CURRENT FIXED	indicates the output is in constant mode or the transmitter is in multidrop mode.
ANALOG OUTPUT SATURATED	indicates the pressure is out of the limits of the calibrated values or at burn-out (output current at 3,90 or 21,00 mA).

TEMPERATURE OUT OF LIMITS	indicates the temperature is out-of-limits.
PV OUT OF LIMITS	indicates the pressure is out-of-limits, the sensor is damaged, the sensor module is not connected, or the transmitter has a false configuration.

## G. ASSETVIEW & FI302

### FI302 Home Page

The figure below shows the *FI302* initial page and its options:

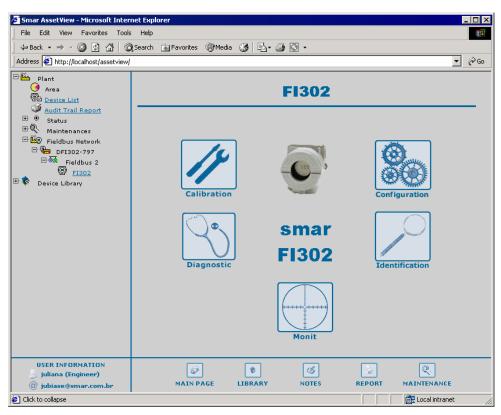


Figure G.1

The following sub-sections will describe each one of the pages developed for the *Device* maintenance.

### FI302 Identification Page

This page displays information relevant to the converter. The user can easily identify and specify the device in the physical plant.

14		S		
CALIBRATIC	ON CONFIGURATI	ON DIAGNOSTIC	IDENTIFICATION	MONIT
DENTIFICATIO	N 🧿	<b>7</b> .	Manufacturer: Device Type: Device Tag:	SMAR F1302 F1302
		Device		
	Tag	FI302		
	Device ID	0003020005:SMAR	-FI302:006801718	
	SW Revision	3.46		
	Device Revison	4		
	Hardware Revision	02036		
	Manufacturer	SMAR		
	Device Type	5		
	DD Revision	2		
	Device Serial Number	0		
	Main Board Serial Number	6801718		
	Ordering Code 1			
	Ordering Code 2	DDD	]	
	Ordering Code 3	24564565646		
		Actuator		
	Act Serial Number	1 0		
	Act Serial Number :	2 0		
	Act Serial Number :	3 0		

Figure G.2

Device	
TAG	indicates the tag associated to the converter in the physical plant. The tag can use up to 32 characters.
DEVICE ID	indicates the identification code of the converter. This code can use up to 32 characters.
SW REVISION	indicates the software revision of the converter.
DEVICE REVISION	indicates the revision of the converter.
HARDWARE REVISION	indicates the hardware revision of the converter.
MANUFACTURER	identifies the converter manufacturer.
DEVICE TYPE	identifies the type of the converter for a specific manufacturer.
DD REVISION	indicates the revision of the DD.
DEVICE SERIAL NUMBER	indicates the serial number of the converter.
MAIN BOARD SERIAL NUMBER	indicates the serial number of the main board.
ORDERING CODE 1 3	indicates the ordering code of the converter.

#### Actuator

ACT SERIAL NUMBER 1 3	indicates the serial number of the actuator.
-----------------------	--

### FI302 Configuration Page

The FI302 contains three output transducer blocks. The channel number of the AO block corresponds to the terminal block with the same number.

14		S	$\square$	$\bigcirc$	
CALIBRATION CON	FIGURATION	DIAGNOSTIC	IDENTIFICATION	MONIT	RECONCILE
CONFIGUR/ AO 1	ATION			Manufao Device Device	Type: FI302
		Analog	Output		
Select the Analog Output: 🛛 🖌 🗸					
Rate Down Rate Up	1	mA /s	Configuration SP LO LIM SP HI LIM	0	m/
PV Unit PV Lower Range Value PV Upper Range Value	mA 1 20	mA mA	EU Unit EU 0% EU 100%	mA 0 19	• m/
	<u>.</u>		bmit re G.3		

### Select the Analog Output

Select the AO block to be configured.

### Parameters Configuration

RATE DOWN	configures the set point rate down related to the time.
RATE UP	configures the set point rate up related to the time.
PV UNIT	unit of the process variable.
PV LOWER RANGE VALUE	lower limit of the process variable.
PV UPPER RANGE VALUE	upper limit of the process variable.
SP LO LIM	lower limit of the AO block set point.
SP HI LIM	upper limit of the AO block set point.
EU UNIT	engineering unit.
EU 0%	value of the measuring corresponding to 0%, in EU.
EU 100%	value of the measuring corresponding to 100%, in EU.

### FI302 Diagnostics Page

14		S		$\bigcirc$
CALIBRATION C	ONFIGURATION	DIAGNOSTIC	IDENTIFICATION	MONIT
DIAGNOSTIC			Manufacturer: Device Type: Device Tag:	SMAR F1302 F1302
Transducer 1		Diagnosis Transducer :	2	Transducer 3
Power Up     Sensor Failure     Ourput Failure     Memory Failure     Our of Service     Devices Needs Maintenance     Soon     Devices Needs Maintenance     Now     Block Configuration Error     Calibration Error     Daya Integrity Error     Software Error     Eletronics Failure     General Error	Output     Memoy     Out of     Device     Soon     Device     Now     Block     Calibra     Data I     Software	r Failure Failure y Failure Service Is Needs Mainten is Needs Mainten Configuration Error ation Error negrity Error re Error nes Failure	ance rr	Power Up     Sensor Failure     Output Failure     Output Failure     Output Failure     Devices Needs Maintena     Soon     Devices Needs Maintena     Now     Block Configuration Error     Calibration Error     Data Integrity Error     Software Error     Eletronics Failure     General Error

This page displays the device status.

Figure G.4

### Diagnosis

Displays the diagnostic status of the device, including the status of the function block, mechanical module and sensor.

POWER UP	indicates that the device has executed the power up procedure.
SENSOR FAILURE	indicates the sensor of the final element has failed (open current loop, for example).
OUTPUT FAILURE	indicates a failure in the output that could be due to the electronic or the mechanical module.
MEMORY FAILURE	indicates an electronic failure according to the internal checkup process, such as an incorrect checksum detected in the main memory.
OUT OF SERVICE	indicates that the function block is out of service.
DEVICE NEEDS MAINTENANCE SOON	the internal diagnostic according to the user configuration or device internal checkup has detected that the device will need maintenance soon. This diagnostic is related to the output current generated.
DEVICE NEEDS MAINTENANCE NOW	the internal diagnostic according to the user configuration or device internal checkup has detected that the device needs maintenance. This diagnostic is related to the calibration, for example.
BLOCK CONFIGURATION ERROR	indicates that there is an error related to the XD_SCALE parameter in the AO function block.

CALIBRATION ERROR	indicates that an error occurred during the calibration of the device, or that a calibration error has been detected while operating the device.
DATA INTEGRITY ERROR	indicates that data stored in the system may be no longer valid, for example, because the checksum of the data in the RAM memory has failed when compared to the data in the non-volatile memory.
SOFTWARE ERROR	the software has detected an error that could have been caused by an improper interruption of a service routine, an arithmetic overflow, a watchdog timer, etc.
ELECTRONICS FAILURE	an electronic component has failed.
GENERAL ERROR	a general error related to the device has been detected.

### FI302 Calibration Page

This page displays configuration data used in the calibration procedures.

14				$\bigcirc$	+
CALIBRATION C	ONFIGURATION	DIAGNOSTIC	IDENTIFICATION	MONIT	RECONCILE
CALIBRAT TRANSDUC			Devic	facturer: :e Type: ce Tag:	SMAR F1302 F1302
		Number of	Transducers		
	Select The Tra	nsducer:	Transducer 1 💌		
Calibrati	on Information	1	Actual Calibration Information		
Who Location Date Last Calibration Type	anereu engineer Unspecified User cal stand	ard calibration	Calibration Unit Minimum Span Actual LO Point Cal Actual HI Point Cal	mA 1 20	mA
		Calibratio	n Methods		
DYNAMIC VALUE CURRENT LOWER CURRENT CALIBRATION UPPER CURRENT CALIBRATION					
Backup Restore					
	Backup Restor	e:	Default Data Restore	•	
		Su	bmit		

Figure G.5

### Number of Transducers

Select the transducer block to be calibrated.

#### Calibration Information

WHO	indicates the person responsible for the executed calibration.
LOCATION	indicates the location of the calibration.
DATE	indicates the date of the executed calibration.
LAST CALIBRATION TYPE	indicates the method used in the last calibration.

#### Actual Calibration Information

CALIBRATION UNIT	indicates the unit for the calibration procedure.	
MINIMUM SPAN	indicates the minimum value allowed between the lower and upper points of the calibration.	
ACTUAL LO POINT CAL	indicates the last lower point of the current calibration.	
ACTUAL HI POINT CAL	indicates the last higher point of the current calibration.	

#### **Calibration Methods**

DYNAMIC VALUE CURRENT: this method shows the current parameters of the converter.

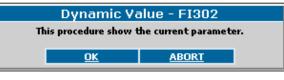


Figure G.6

Click Ok to proceed. The dialog box will display the current value measured, as indicated below.

Dynamic Value - FI302				
	mA			
οκ				

Figure C	<b>3</b> .7
----------	-------------

LOWER CURRENT CALIBRATION: this method is used when the user wants to calibrate the lower current. The user can select the calibration unit and type the value of the applied current to be used as the reference value of the converter, respecting the limits and the minimum span.

When this method is selected, a message box appears warning the user that this procedure must be executed when the plant control is set at manual. Connect the ammeter to the corresponding output channel of the FI302.

Lower Current Calibration - FI302			
The control loop must be in Manual. Connect an ammeter in the correspondent output channel of the FI302.			
<u>OK ABORT</u>			

Figure G.8

Click Ok and wait until the current value is stable.

Lower Current Calibration - FI302		
Wait until the current read in the ammeter is stable.		
	OK	



Click OK and the current will be displayed.

Lov	Lower Current Calibration - FI302				
	VALUE	0		mA	
	Is the output current correct?				
	YES			<u>NO</u>	



If the value displayed is correct, click Yes to conclude this procedure. Otherwise, click *No* and type the current value:

Lower Current Calibration - FI302		
Type the value of the measured current:		
VALUE mA		
<u>OK CANCEL</u>		
Fin 10 44		

Figure G.11

Click *OK* to apply the new current value and then click Yes to confirm the alteration, as shown in Figure G.10.

**UPPER CURRENT CALIBRATION**: this method is similar to the *Lower Current Calibration* described above.

When this method is selected, a message box appears warning the user that this procedure must be executed when the plant control is set at manual. Connect the ammeter to the corresponding output channel of the FI302.

Upper Current Calibration - FI302				
The control loop must be in Manual. Connect an ammeter in the correspondent output channel of the FI302.				
<u>OK ABORT</u>				

Figure G.12

Click Ok and wait until the current value is stable.



Figure G.13

Click OK and the current will be displayed.

Upper Current Calibration - FI302					
٧٧	<b>LUE</b>	0		mA	
	Is the output current correct?				
	<u>YES</u>	1	1	<u>10</u>	

Figure G.14

If the value displayed is correct, click Yes to conclude this procedure. Otherwise, click No and type the current value:

Upper Current Calibration - FI302		
Type the value of the measured current:		
VALUE	mA	
<u>ок</u>	<u>CANCEL</u>	

Figure G.15

Click OK to apply the new current value and then click Yes to confirm the alteration, as shown in Figure G.14.

#### **Backup Restore**

Select the method to save the calibration data or restore the configuration data.

NONE	Ok.
FACTORY CAL RESTORE	restores the factory calibration data.
LAST CAL RESTORE	restores data from the last calibration.
DEFAULT DATA RESTORE	restores default data from the flash memory.
SENSOR DATA RESTORE	restores sensor data.
FACTORY CAL BACKUP	saves the factory calibration data.
LAST CAL BACKUP	saves data from the last calibration.
SENSOR DATA BACKUP	saves sensor data.

## FI302 Monitoring Page

1	1	8	<b>S</b>		$\bigcirc$
CALIB	RATION CON	IGURATION	DIAGNOSTIC	IDENTIFICATION	MONIT
MONI	т	-	7	Manufacture Device Type Device Tag	e: F1302
		Meas	ured Transdu	icer 1	
	Final Value	0	mA		
	Final Status	Good_NonCa	scade::NonSpecif	fic:NotLimited	
		Meas	ured Transdu	icer 2	
	Final Value	0	mA		
	Final Status	Good_Cascad	de::NonSpecific:N	lotLimited	
	-	Meas	ured Transdu	icer 3	
	Final Value	4.16	mA		
	Final Status	Good_Casca	de::NonSpecific:N	lotLimited	

This page displays the parameters of the transducer blocks.

Figure G.16

### Measured Transducer

FINAL VALUE	indicates the final value of the current in the corresponding transducer block.
FINAL STATUS	indicates the final status of the current in the corresponding transducer block.

# H. ASSETVIEW & IF302

### IF302 Home Page

The figure below shows the *IF302* initial page and its options:

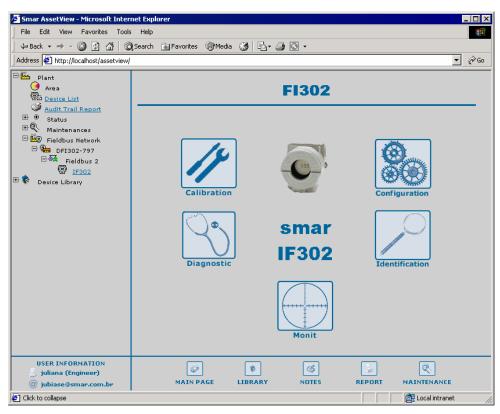


Figure H.1

The following sub-sections will describe each one of the pages developed for the *Device* maintenance.

### IF302 Identification Page

This page displays information relevant to the converter. The user can easily identify and specify the device in the physical plant.

	۶	<b>S</b>		$\geq$
CALIBR	ATION CONFIGURATION	DIAGNOSTIC	IDENTIFICATION MON	4IT
IDENTIFICA		599	Manufacturer: Device Type: Device Tag:	SMAR IF302 IF302
	Device		Se	nsor
Tag	IF302		Sensor 1 Serial Number	0
Device ID	0003020003:SMAR-IF302	2:004803599	Sensor 2 Serial Number	0
Device Serial Number	1764		Sensor 3 Serial Number	0
Device Revision	4			
DD Revision	2			
Firmware Revision	3.46e			
Hardware Revision	01035			
Device Type	3			
Manufacturer	SMAR			
Main Board Serial Number	4803599			
Ordering Code				

Figure H.2

Device	
TAG	indicates the tag associated to the converter in the physical plant. The tag can use up to 32 characters.
DEVICE ID	indicates the identification code of the converter. This code can use up to 32 characters.
DEVICE SERIAL NUMBER	indicates the serial number of the converter.
DEVICE REVISION	indicates the revision of the converter.
DD REVISION	indicates the revision of the DD.
FIRMWARE REVISION	indicates the firmware revision of the converter.
HARDWARE REVISION	indicates the hardware revision of the converter.
DEVICE TYPE	identifies the type of the converter for a specific manufacturer.
MANUFACTURER	identifies the converter manufacturer.
MAIN BOARD SERIAL NUMBER	indicates the serial number of the main board.
ORDERING CODE	indicates the ordering code of the converter.

#### Sensor

SENSOR SERIAL NUMBER inc	dicates the serial number of the sensor.
--------------------------	--

### IF302 Configuration Page

The IF302 contains three input transducer blocks. The channel number of the AI block corresponds to the terminal block with the same number.

14		S		$\bigcirc$	
CALIBRATION	CONFIGURATION	DIAGNOSTIC	IDENTIFICATION	MONIT	RECONCILE
CONFIGUR	ATION	539	Devi	facturer: ce Type: ice Tag:	SMAR IF302 IF302
	Pa	rameters Conf	iguration Sensor 1	1	
PV Unit	mA 👤		Output Unit	mA	•
PV Lower Range Value	1	mA	Outout 0%	4	mA
V Upper Range Value	19	mA	Output 100%	20	mA
	Pa	rameters Conf	iguration Sensor 2	2	
PV Unit	mA 💌		Output Unit	mA	•
	1	_			
V Lower Range Value	4	mA	Outout 0%	4	mA
	20	mA mA	Outout 0% Output 100%	4	mA mA
PV Lower Range Value PV Upper Range Value	20	mA		20	
PV Upper Range Value	20	mA	Output 100%	20	
	20 Pai	mA	Output 100% iguration Sensor 3	20	mA

Figure H.3

### Parameters Configuration

PV UNIT	unit of the process variable.	
PV LOWER RANGE VALUE	lower limit of the process variable.	
PV UPPER RANGE VALUE	upper limit of the process variable.	
OUTPUT UNIT	output parameter unit.	
OUTPUT 0%	value of the output parameter corresponding to 0%.	
OUTPUT 100%	value of the output parameter corresponding to 100%.	

## IF302 Diagnostics Page

This page displays the device status.

14		<b>Solution</b>		$\bigcirc$	
CALIBRATION	CONFIGURATION	DIAGNOSTIC	IDENTIFICATION	MONIT	
DIAGNOSTIC		\$	Manufacture Device Type Device Tag:	IF302	
Transducer 1		Diagnosis Transducer	2	Transduce	er 3
<ul> <li>Power Up</li> <li>Sensor Failure</li> <li>Output Failure</li> <li>Out of Service</li> <li>Devices Needs Maintenance Soon</li> <li>Devices Needs Maintenance Now</li> <li>Block Configuration Error</li> <li>Calibration Error</li> <li>Data Integrity Error</li> <li>Software Error</li> <li>Eletronics Failure</li> <li>General Error</li> </ul>	Outpu     Memo     Out of     Software     Out of     Out of	r Failure t Failure t Failure Service es Needs Mainten es Needs Mainten Configuration Error ation Error integrity Error are Error nics Failure	ance	Power Up     Sensor Failure     Output Failure     Memory Failure     Out of Service     Devices Needs M     Soon     Devices Needs M     Now     Block Configurati     Calibration Error     Data Integrity Err     Software Error     Eletronics Failure     General Error	laintenance laintenance on Error ror

Figure H.4

### Diagnosis

Displays the diagnostic status of the device, including the status of the function block, mechanical module and sensor.

POWER UP	indicates that the device has executed the power up procedure.
SENSOR FAILURE	indicates the device sensor has failed (pressure exceeded, for example, in a 4-20mA transmitter).
OUTPUT FAILURE	indicates a failure in the output that could be due to the electronic or the mechanical module.
MEMORY FAILURE	indicates an electronic failure according to the internal checkup process, such as an incorrect checksum detected in the main memory.
OUT OF SERVICE	indicates that the function block is out of service.
DEVICE NEEDS MAINTENANCE SOON	the internal diagnostic according to the user configuration or device internal checkup has detected that the device will need maintenance soon.
DEVICE NEEDS MAINTENANCE NOW	the internal diagnostic according to the user configuration or device internal checkup has detected that the device needs maintenance. This diagnostic is related to the 4-20mA calibration.
BLOCK CONFIGURATION ERROR	indicates that there is an error related to the XD_SCALE parameter in the AI function block.
CALIBRATION ERROR	indicates that an error occurred during the calibration of the device, or that a calibration error has been detected while operating the device.
DATA INTEGRITY ERROR	indicates that data stored in the system may be no longer valid, for example, because the checksum of the data in the RAM memory has failed when compared to the data in the non-volatile memory.

SOFTWARE ERROR	the software has detected an error that could have been caused by an improper interruption of a service routine, an arithmetic overflow, a watchdog timer, etc.
ELECTRONICS FAILURE	an electronic component has failed.
GENERAL ERROR	a general error related to the device has been detected.

### IF302 Calibration Page

This page displays configuration data used in the calibration procedures.

14	8	S		$\bigcirc$	<b>→</b>
CALIBRATIO	IN CONFIGURATION	DIAGNOSTIC	IDENTIFICATION	MONIT	RECONCILE
CALIBR/ SENSC			Devi	facturer: ce Type: ice Tag:	SMAR 1F302 1F302
		Number of	Transducer		
		Sensor Type:	Sensor 1 💌		
Calib	ration Information		Actua	l Calibration	Information
Who	Mayra		Calibration Unit	mA	
Date	Unspecified		Minimun Span	6	mA
Location	Smar-xvi		Actual Cal Point L	.0 0	mA
Last Calibration Type	User cal standard ca	libration	Actual Cal Point H	II 20	mA
		Calibratio	n Methods		
		DYNAMIC VA LOWER CURREN UPPER CURRENT			
		Backup	Restore		
	Backup Resto	re: Last Ca	l Restore 💽		
		Sut	omit		

Figure H.5

#### Number of Transducers

Select the transducer block to be calibrated.

### **Calibration Information**

WHO	indicates the person responsible for the executed calibration.	
LOCATION	indicates the location of the calibration.	
DATE	indicates the date of the executed calibration.	
LAST CALIBRATION TYPE	indicates the method used in the last calibration.	

Actual Calibration Information			
CALIBRATION UNIT	indicates the unit for the calibration procedure.		
MINIMUM SPAN	indicates the minimum value allowed between the lower and upper points of the calibration.		
ACTUAL CAL POINT LO	indicates the last lower point of the current calibration.		
ACTUAL CAL POINT HI	indicates the last higher point of the current calibration.		

. . ... . . ... ...

#### **Calibration Methods**

DYNAMIC VALUE CURRENT: this method shows the current parameters of the converter.

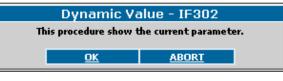


Figure H.6

Click Ok to proceed. The dialog box will display the current value measured, as indicated below.

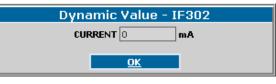


Figure H.7

LOWER CURRENT CALIBRATION: this method is used when the user wants to calibrate the lower current. The user can select the calibration unit and type the value of the applied current to be used as the reference value of the converter, respecting the limits and the minimum span.

Connect the current generator to the IF302's input channel to be calibrated and apply the lower current value.

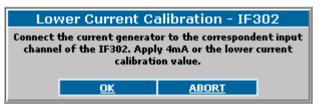


Figure H.8

Click Ok and wait until the current value is stable.

Lower Current Calibration - IF302	
Wait until the current in the IF302 is stable.	
CONTINUE	

Figure H.9

Click Continue and the current will be displayed.

Lov	Lower Current Calibration - IF302				
	VALUE	0		mA	
	Is the current value correct?				
	YES			<u>NO</u>	

Figure H.10

If the value displayed is correct, click Yes to conclude this procedure. Otherwise, click No and type the current value:

Lower Current C	alibration - IF302
VALUE	mA
Please, enter th	e applied current.
<u>OK</u>	<u>CANCEL</u>

Figure H.11

Click *OK* to apply the new current value and then click Yes to confirm the alteration, as shown in Figure H.10.

**UPPER CURRENT CALIBRATION**: this method is similar to the *Lower Current Calibration* described above.

Connect the current generator to the IF302's input channel to be calibrated and apply the upper current value.

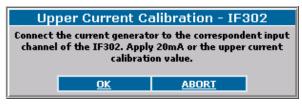


Figure H.12

Click Ok and wait until the current value is stable.



Figure H.13

Click Continue and the current will be displayed.

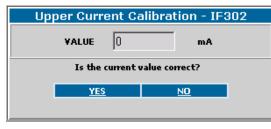


Figure H.14

If the value displayed is correct, click Yes to conclude this procedure. Otherwise, click No and type the current value:

Upper Current Calibration - IF302				
	VALUE	mA		
Please, enter the applied current.				
	<u>OK</u>	<u>CANCEL</u>		

Figure H.15

Click OK to apply the new current value and then click Yes to confirm the alteration, as shown in Figure H.14.

#### **Backup Restore**

Select the method to save the calibration data or restore the configuration data.

NONE	Ok.
FACTORY CAL RESTORE	restores the factory calibration data.
LAST CAL RESTORE	restores data from the last calibration.
DEFAULT DATA RESTORE	restores default data from the flash memory.
SENSOR DATA RESTORE	restores sensor data.
FACTORY CAL BACKUP	saves the factory calibration data.
LAST CAL BACKUP	saves data from the last calibration.
SENSOR DATA BACKUP	saves sensor data.

## IF302 Monitoring Page

	14		<b>Solution</b>		$\bigcirc$		
CA	LIBRATION	CONFIGURATION	DIAGNOSTIC	IDENTIFICATION	MONIT		
мон	IIT			Manufactur Device Typ Device Tag	e: IF302		
			Transducer 1				
	Final Value	22	mA				
	Final Status	Bad::Senso	rFailure:NotLimite	:d			
	Transducer 2						
	Final Value	0	mA				
	Final Status	Bad::Senso	rFailure:NotLimit	ed			
	Transducer 3						
	Final Value						
	Final Status						

This page displays the parameters of the transducer blocks.

Figure H.16

### Measured Transducer

PRIMARY VALUE	indicates the value of the current output in the corresponding transducer block.
PRIMARY VALUE STATUS	indicates the status of the current in the corresponding transducer block.