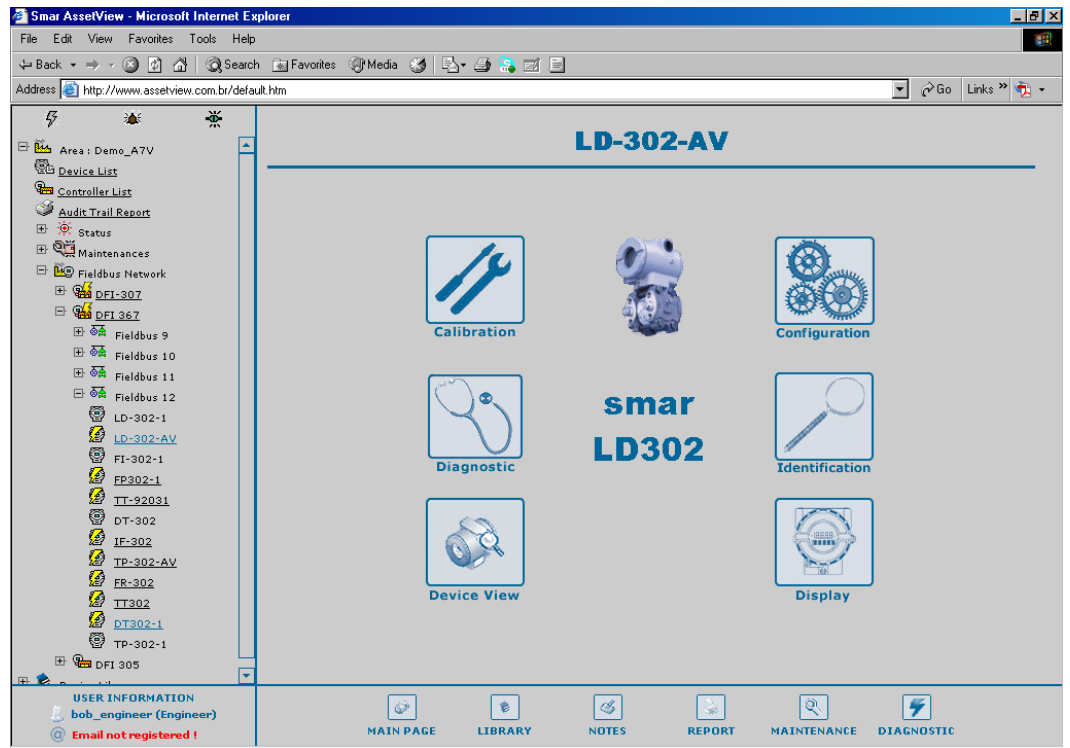


LD302 - AssetView HMI





Specifications and information are subject to change without notice.
Up-to-date address information is available on our website.

web: www.smar.com/contactus.asp

LD302 - ASSETVIEW HMI

LD302 Home Page

This manual describes the pages developed for LD302 maintenance using AssetView.

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

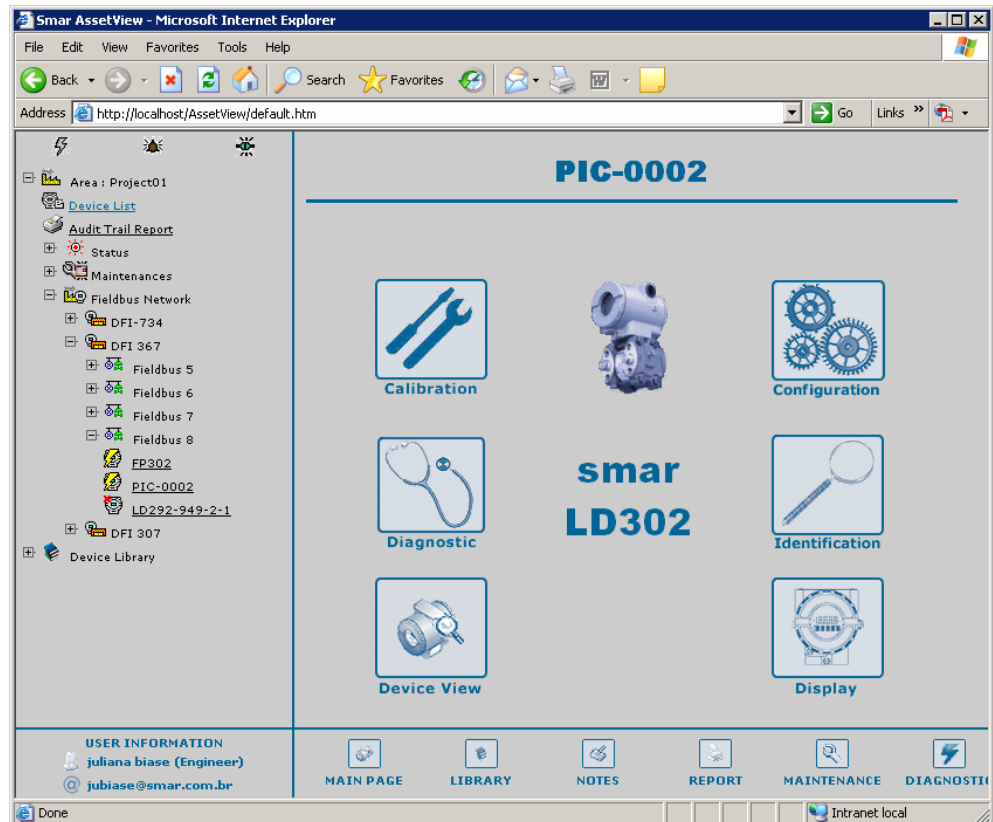



Figure 1. LD302 Home Page


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


LD302 Identification Page


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


LD-302-AV - IDENTIFICATION





CALIBRATION


CONFIGURATION


DEVICE VIEW


DIAGNOSTIC


DISPLAY

| Device | |
|---------------------------|--|
| Tag | <input type="text" value="LD-302-AV"/> |
| Device Type | <input type="text" value="LD302"/> |
| Device Serial Number | <input type="text" value="7194"/> |
| Device Revision | <input type="text" value="04"/> |
| Hardware Revision | <input type="text" value="00035"/> |
| Device ID | <input type="text" value="0003020001:SMAR-LD302:000804818"/> |
| Manufacturer | <input type="text" value="SMAR"/> |
| Main Board Serial Number | <input type="text" value="804818"/> |
| Firmware Revision | <input type="text" value="3.46"/> |
| DD Revision | <input type="text" value="02"/> |
| Ordering Code | <input type="text" value=""/> |
| Sensor | |
| Sensor Type | <input type="text" value="Capacitance"/> |
| Sensor Fluid | <input type="text" value="Inert"/> |
| Sensor Range Code | <input type="text" value="Range 2 (200 in H2O)"/> |
| Sensor Isolation Material | <input type="text" value="316_Stainless_Steel"/> |
| Sensor Serial Number | <input type="text" value="0"/> |
| Flange | Remote Seal |
| Flange Type | Number of Remote Seals |
| Flange Material | Remote Seal Type |
| Drain / Vent Material | Remote Seal Fluid |
| O-Ring Material | Remote Seal Isolation Material |

Figure 2. Identification Page

Device

| | |
|---------------------------------|--|
| TAG | Indicates the tag associated to the transmitter in the physical plant. The tag can have up to 32 characters. |
| DEVICE TYPE | Identifies the transmitter type for a specific manufacturer. |
| DEVICE SERIAL NUMBER | Indicates the transmitter serial number. |
| DEVICE REVISION | Indicates the transmitter revision. |
| HARDWARE REVISION | Indicates the transmitter hardware revision. |
| DEVICE ID | Indicates the transmitter identification code. This code can have 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 transmitter firmware revision. |
| DD REVISION | Indicates the DD revision. |
| ORDERING CODE | Indicates the transmitter ordering code. |

Sensor

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

Flange

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

Remote Seal


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


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 status diagnostic in the **LD302 Diagnostic Page** (refer to the next section). This status is generated according to the user configuration in the **LD302 Configuration Page**. For example, the “**Sensor Failure**” diagnostic may be caused by an overpressure in the sensor.


LD-302-AV - CONFIGURATION






 CALIBRATION


 DEVICE VIEW


 DIAGNOSTIC


 DISPLAY


 IDENTIFICATION


 RECONCILE

Device Operation Mode

| | RES | TRD | AI | DSP | |
|--------|--|--|--|--|-------------------------------------|
| Target | ROut RCas Cas Auto Man LO IMan OOS | ROut RCas Cas Auto Man LO IMan OOS | ROut RCas Cas Auto Man LO IMan OOS | ROut RCas Cas Auto Man LO IMan OOS | OPERATION MODE NOTE |
| Actual | Retrieving data... | Retrieving data... | Retrieving data... | Retrieving data... | |

Measurement Configuration

| | | | |
|----------------------------------|--|-----------------------------|---------------------------------------|
| Auto Zero | <input type="text" value="True"/> | FUNCTION | <input type="text" value="Indirect"/> |
| CHARACTERIZATION | <input type="text" value="Enable and Backup Cal"/> | LOW CUT OFF | <input type="text" value="1"/> |

| Engineering Variable | Process Variable |
|-----------------------------|-----------------------------------|
| UNIT | <input type="text" value="°F"/> |
| 0% | <input type="text" value="1"/> |
| 100% | <input type="text" value="5081"/> |
| UNIT | <input type="text" value="psi"/> |
| LOWER RANGE | <input type="text" value="0"/> |
| UPPER RANGE | <input type="text" value="5080"/> |

Alert Configuration

| | | | |
|----------------------|--------------------------------|----------------------------|--------------------------------|
| Max Offset Deviation | <input type="text" value="1"/> | Max Gain Deviation | <input type="text" value="1"/> |
| Overpressure Limit | <input type="text" value="8"/> | Max Number of Overpressure | <input type="text" value="6"/> |

Figure 3. Configuration Page

Device Operation Mode

Indicates the operation mode for the device:

| | |
|-------------|---|
| OOS | If this mode is selected, the value of the <i>Mode Block</i> parameter 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 <i>Mode Block</i> parameter 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 <i>Mode Block</i> parameter 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 level. |
| PRESSURE | Indicates the transmitter is measuring pressure. |
| FLOW | Indicates the transmitter is measuring flow. |

Measurement Configuration

| | |
|-------------------------|---|
| AUTO ZERO | Enables and disables the zero cutoff. |
| CHARACTERIZATION | Enables and disables the pressure characterization curve. |
| 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 Cut Off</i> , zero ("0") will be displayed. |

Engineering Variable

| | |
|-------------|---|
| UNIT | Engineering unit. |
| 0% | Value of the pressure corresponding to 0%, in EU. |
| 100% | Value of the pressure corresponding to 100%, in EU. |

Process Variable

| | |
|--------------------|--------------------------------------|
| UNIT | Unit of the process variable. |
| LOWER RANGE | Lower limit of the process variable. |
| UPPER RANGE | Upper limit of the process variable. |






Alert Configuration

| | |
|---------------------------------------|--|
| MAXIMUM OFFSET DEVIATION | Indicates the maximum offset deviation before an alarm is generated. |
| OVERPRESSURE LIMIT | Defines the maximum overpressure limit before an alarm is generated. |
| MAXIMUM GAIN DEVIATION | Defines the maximum gain before an alarm is generated. |
| MAXIMUM NUMBER OF OVERPRESSURE | Defines the maximum number of overpressure before an alarm is generated. |

LD302 Diagnostics Page

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

LD-302-AV - DIAGNOSTIC

CALIBRATION CONFIGURATION DEVICE VIEW DISPLAY IDENTIFICATION

Device Status

| | | | |
|------------------------------|---------------------------------------|----------------|--------------------------------|
| Maximum Pressure Measured | <input type="text" value="6477"/> | Current Offset | <input type="text" value="0"/> |
| Maximum Temperature Measured | <input type="text" value="103,3546"/> | Current Span | <input type="text" value="1"/> |





| Device | Description | Block | Bridge | Channel | |
|---|--------------------|------------|---------|-------------|-----|
|  LD-302-AV | OutOfService | LD-302-TRD | DFI 367 | Fieldbus 12 | ACK |
|  LD-302-AV | Default Value Set | LD-302-TRD | DFI 367 | Fieldbus 12 | ACK |
|  LD-302-AV | BlockConfiguration | LD-302-AI | DFI 367 | Fieldbus 12 | ACK |
|  LD-302-AV | SimulationActive | LD-302-RES | DFI 367 | Fieldbus 12 | ACK |

Figure 4. Diagnostic Page

Device Status

| | |
|-------------------------------------|---|
| MAXIMUM PRESSURE MEASURED | Indicates the maximum pressure measured. |
| MAXIMUM TEMPERATURE MEASURED | Indicates the maximum temperature measured. |
| CURRENT OFFSET | Indicates the current calibrated offset. |
| CURRENT SPAN | Indicates the current calibrated span. |

Diagnosis

This field shows the continuous diagnostic status for the device, including the function block condition, the mechanical module condition and the sensor condition.

| | |
|--------------------------------------|--|
| POWER UP | Indicates that the device has executed the initial operation procedure. |
| SENSOR FAILURE | Indicates a failure in the sensor, such as overpressure. |
| MEMORY FAILURE | Indicates an electronic failure according to the internal checking procedure, 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 checking 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 checking has detected that the device needs maintenance. This diagnostic is related to the sensor calibration. |
| CALIBRATION ERROR | Indicates that an error occurred during the device calibration, or 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 may have been caused by a deviation of a service routine, an interruption, a lost pointer, 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 5. Calibration Page

Pressure Calibration Information

| | |
|--------------------------------------|--|
| CALIBRATION UNIT | Indicates the unit for the pressure calibration procedure. |
| SENSOR LOWER RANGE LIMIT | Indicates the lower limit for the range's sensor. |
| SENSOR UPPER RANGE LIMIT | Indicates the upper limit for the range's sensor. |
| MINIMUM SPAN | Indicates the minimum value allowed between the lower and upper points of the calibration. |
| CURRENT LOW POINT CALIBRATION | Indicates the current lower point of the pressure calibration. |

| | |
|---------------------------------------|---|
| CURRENT HIGH POINT CALIBRATION | Indicates the current higher point of the pressure calibration. |
| FACTORY LOW POINT CALIBRATION | Indicates the factory's lower point of the pressure calibration. |
| FACTORY HIGH POINT CALIBRATION | Indicates the factory's higher point of the pressure calibration. |
| PRESSURE MEASURED | Indicates the pressure measured by the device. |
| TEMPERATURE MEASURED | Indicates the temperature measured by the device. |

Temperature Calibration Information

| | |
|--------------------------------|---|
| CALIBRATION UNIT | Indicates the unit for the temperature calibration procedure. |
| CALIBRATION TEMPERATURE | Indicates the value of the last temperature calibration. |

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 reference value to the transmitter, observing the sensor limits and the minimum span.

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

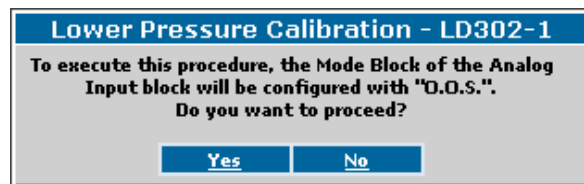


Figure 6. Configuring the Mode Block

Click **Yes**, apply the pressure and wait for the sensor stabilization.

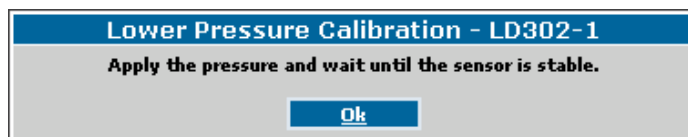


Figure 7. Stabilizing the Pressure

Click **OK** and the pressure measured will be shown.

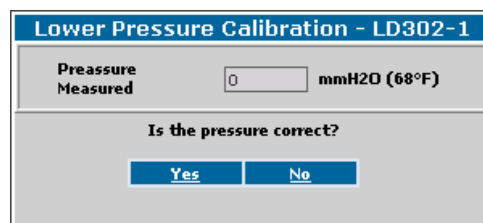


Figure 8. Confirming the Value of the Pressure

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

Figure 9. New Pressure Value

Click **OK** to apply the new pressure value, and then click **Yes** to confirm the alteration, as shown in Figure 8. The calibration procedure will be concluded.

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 10. Configuring the Mode Block

Click **Yes**, apply the pressure, and wait for the sensor stabilization.

Figure 11. Stabilizing the Pressure

Click **OK** and the pressure measured will be shown.

Figure 12. Confirming the Value of the Pressure

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

Figure 13. New Pressure Value

Click **OK** to apply the new pressure value, and then click **Yes** to confirm the alteration, as shown in Figure 12. The calibration procedure will be concluded.

SENSOR CHARACTERIZATION:

This method is used to correct the sensor reading in several points. Use an accurate and stable pressure source to guarantee that the accuracy is at least three times better than the transmitter accuracy.

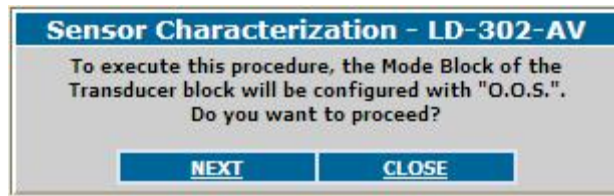


Figure 14. Configuring the Mode Block

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

Apply the pressure to the transmitter and waits the sensor stabilization.

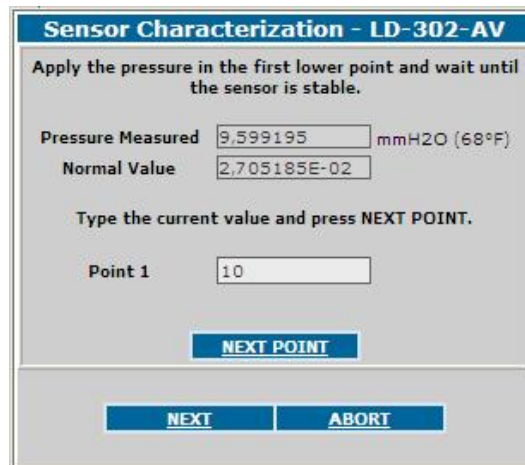


Figure 15. Configuring the First Point

The pressure measured will be shown. Type the first point value, and click **Next Point**.

Apply pressure to the second point click **Next Point**, and then, successively up to the last point. Up to five points can be inserted. Click **Finish** to conclude the procedure.

NOTE

When more than two and less than five points are used, after insert them, and clicking **Next** the following figure will appear. In the **Curve Y (%)** and **Curve X (%)** tabs only the calibrated points will appear before clicking the **Next** option.

| Sensor Characterization - LD-302-AV | |
|--|---|
| The following table was store on device. | |
| CurveY (%) | CurveX (%) |
| Point 1 <input type="text" value="10"/> | <input type="text" value="2,698529E-02"/> |
| Point 2 <input type="text" value="22"/> | <input type="text" value="2,698529E-02"/> |
| Point 3 <input type="text" value="3"/> | <input type="text" value="2,698529E-02"/> |
| Point 4 <input type="text" value="44"/> | <input type="text" value="2,698529E-02"/> |
| Point 5 <input type="text" value="55"/> | <input type="text" value="2,698529E-02"/> |
| Location <input type="text" value="SMAR XVI"/> | |
| Date <input type="text" value="[Wed] Nov 12,2008 16:02:47:000"/> | |
| Who <input type="text" value="bob_engineer"/> | |
| <input type="button" value="Submit"/> | |
| <input type="button" value="FINISH"/> | |

Figure 16. Finishing the Points' Configuration

Type the location when the **Sensor Characterization** procedure is executed, and click **Submit**. Click **Finish** to conclude the procedure.

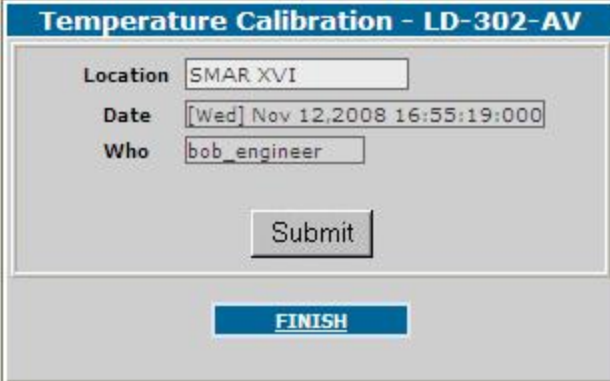
TEMPERATURE CALIBRATION

This method is used to calibrate the temperature sensor.

| Temperature Calibration - LD-302-AV | |
|---|--|
| This procedure executes the Temperature Calibration. | |
| Check if the temperature measured is correct. if not type the correct value on cal temperature field. | |
| Temperature Measured | <input type="text" value="25,94488"/> °C |
| Cal Temperature | <input type="text" value="25"/> |
| <input type="button" value="Submit"/> | |
| <input type="button" value="NEXT"/> | <input type="button" value="CLOSE"/> |

Figure 17. Stabilizing the Temperature

If the value is correct, click **Next**. Otherwise, type the correct temperature value, click **Submit**, wait for the sensor stabilization, and then click **Next**. The following figure will appear.



Temperature Calibration - LD-302-AV

Location:

Date:

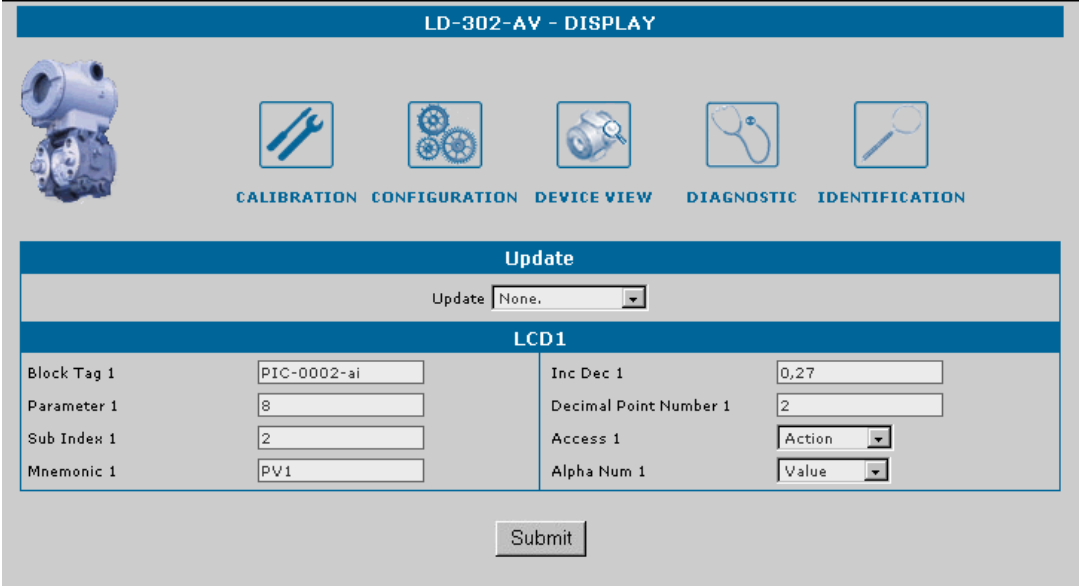
Who:

Figure 18. New Temperature Value


Type the location when the **Temperature Calibration** procedure is executed, and click **Submit**. Click **Finish** to conclude the procedure.

LD302 Display Page

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



LD-302-AV - DISPLAY



Update

Update:

LCD1

| | | | |
|-------------|--|------------------------|-------------------------------------|
| Block Tag 1 | <input type="text" value="PIC-0002-ai"/> | Inc Dec 1 | <input type="text" value="0,27"/> |
| Parameter 1 | <input type="text" value="8"/> | Decimal Point Number 1 | <input type="text" value="2"/> |
| Sub Index 1 | <input type="text" value="2"/> | Access 1 | <input type="text" value="Action"/> |
| Mnemonic 1 | <input type="text" value="PV1"/> | Alpha Num 1 | <input type="text" value="Value"/> |

Figure 19. Display Page

Display

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

LD302 Device View Page

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

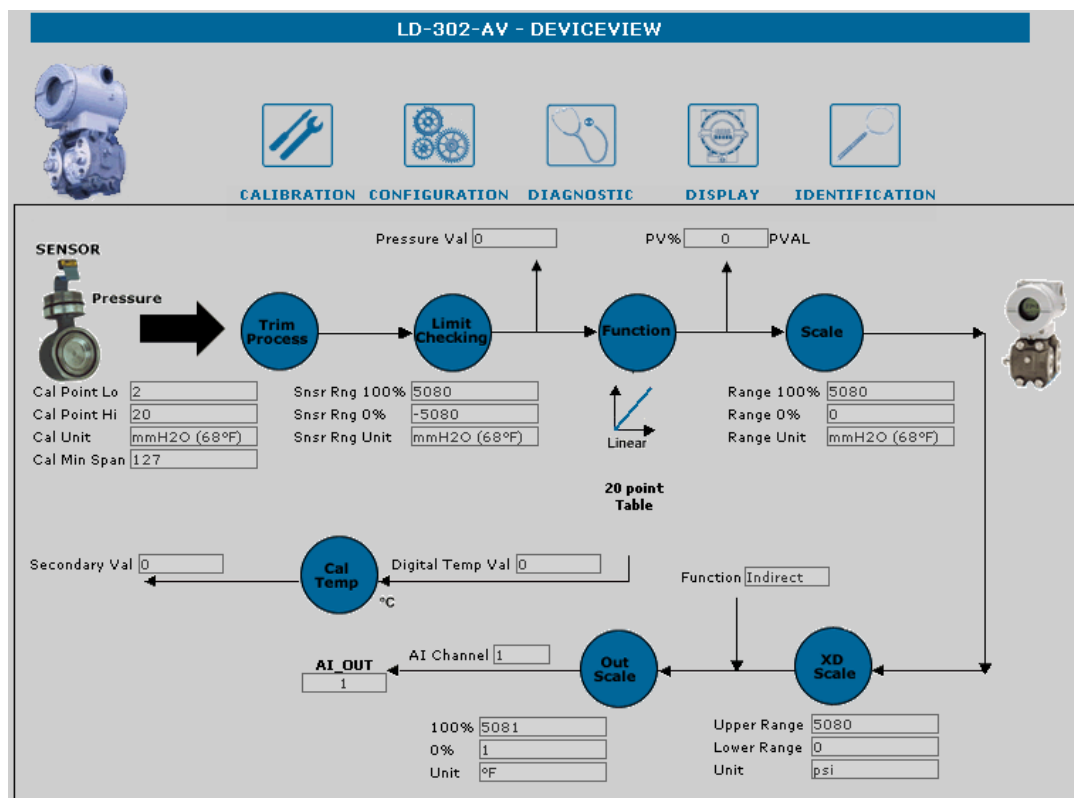


Figure 20. Device View Page