prosense®

Field Device Configurator Software

Help File

ProSense Field Device Configurator Software

◤AUTOMATIONDIRECT⋮

Please include the Manual Number and the Manual Issue, both shown below, when communicating with Technical Support regarding this publication.

| Publication History		
Issue	Date	Description of Changes
1st Edition	08/2023	Original

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1. General

ProSense Field Device Configurator PC software is a utility program that allows users to easily configure ProSense XTH2-0-UNV and XTD2-0-UNV temperature transmitters. Download your free copy of the ProSense Field Device Configurator at www.AutomationDirect.com and connect your ProSense temperature transmitter through an XT-USB configuration cable. (XT-USB purchased separately).

Connection Examples

XTH2-0-UNV Connection
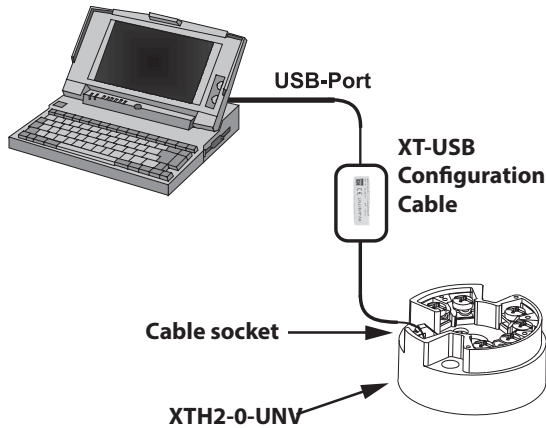
XTD2-0-UNV Connection
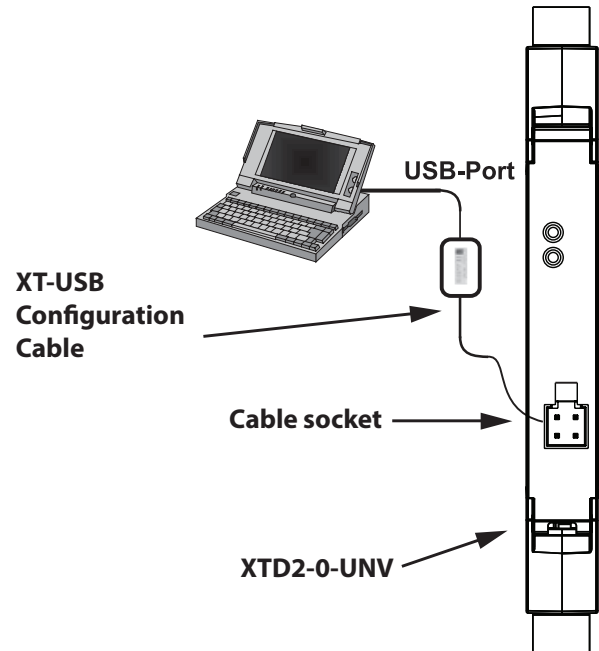
2. Operation

2.1 Home

After ProSense Field Device Configurator has been installed and started the Home Screen appears. If the Manual Connection icon does not appear, select Settings and enable the Manual Connection Mode (see Section 2.2).:
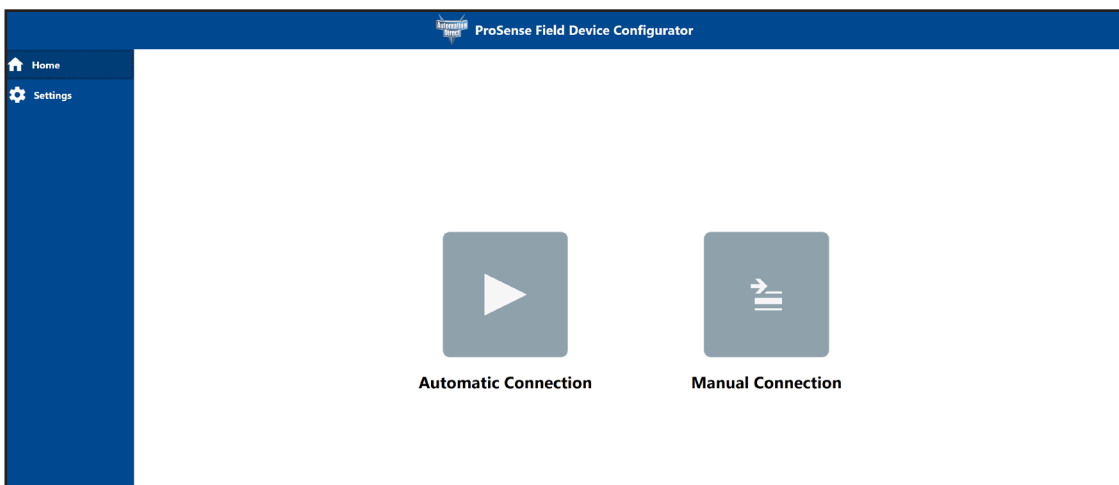

Figure 1

On the home screen you have the option to choose Automatic Connection or Manual Connection. If the Manual Connection icon does not appear, select Settings and enable the Manual Connection Mode (see Section 2.2). The Automatic Connection will try to connect to the device using the available COM port on your PC. If it is unable to connect or you have multiple COM devices available it will tell you to use the Manual Connection mode. Selecting Manual Connection will allow you to select the COM Port and Baud rate manually as seen in Fig. 2. Once selected click the connect button.

Figure 2

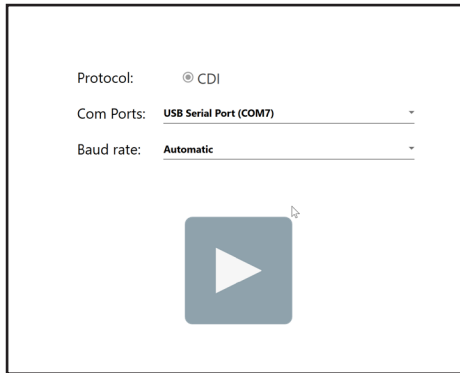## 2.2 Settings

Selecting Settings allows you to change the language, switch between Basic and Expert Setup modes, and enable or disable the Manual Connection mode.
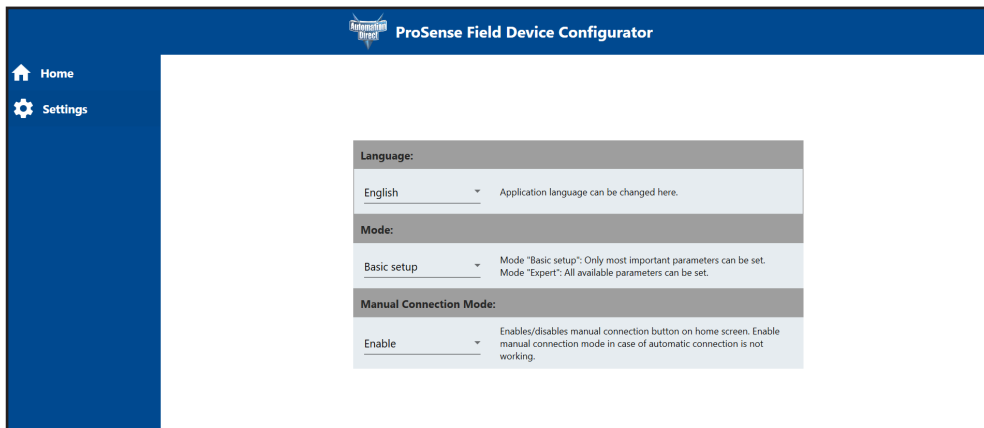

Figure 3

2.3 Setup

After connection has been made with the transmitter the side menu and either the Basic or Expert Setup screen will be displayed (depending on the Setup Mode selected in Settings, see Section 2.2).
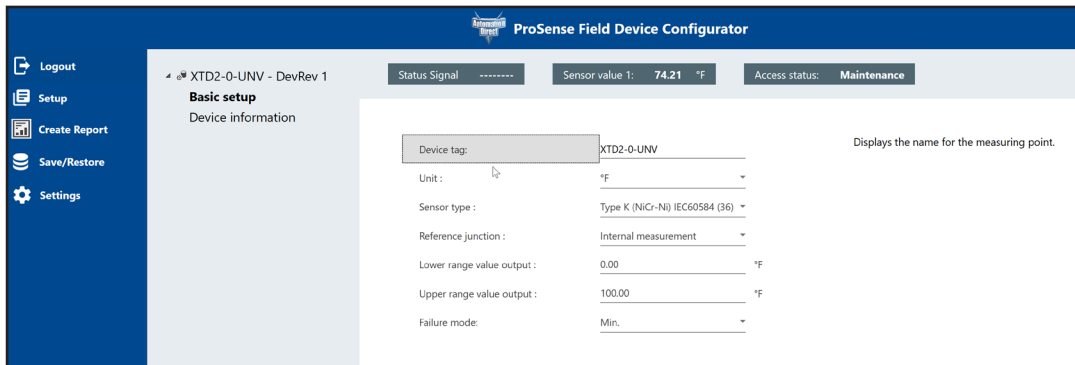

Figure 4

2.3.1 Logout

The Logout button in Fig. 4 will disconnect you from the transmitter.

2.3.2 Setup

Setup in Fig. 4 will display either the Basic or Expert parameter session. The option for Basic and Expert is found in the Settings.

2.3.3 Create Report

Create Report in Fig. 4 allows you to create a PDF file of the Basic or Expert Setup.

2.3.4 Save/Restore

Save/Restore in Fig. 4 allows you to save the current configuration to a file or restore a previously saved configuration file to the connected device.

2.3.5 Settings

Settings in Fig. 4 allows you to change the language, switch between Basic and Expert setup modes, and enable or disable the manual connection mode.

2.3.6 Info

The Info button on the bottom of the window displays contact information, licensing information, and how to retrieve logging data. See Figure 5

About:

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Error reporting

The tool has a logging mechanism. To retrieve the logging data, press Ctrl+Alt+L.

Licenses:

Material Design In XAML   ˅

PDFsharp / MigraDoc Foundation   ˅

NLog   ˅

MicrosoftCSharp   ˅

JetBrainsAnnotations   ˅

Figure 5

2.4 Basic Setup

The availability of some parameters is dependent on the selection of other parameters (for example, the Reference Junction parameter is only available when a Thermocouple input type is previously selected).

Figure 6

Basic Settings

Sensor Types:

	Input Type	Programmable Measuring Range Limits	Min. Span
Inputs	Pt100 RTD Pt200 RTD Pt500 RTD Pt1000 RTD (to IEC 751) a=0.003851)	-328 to 1562°F (-200 to 850°C) -328 to 1562°F (-200 to 850°C) -328 to 932°F (-200 to 500°C) -328 to 482°F (-200 to 250°C)	18°F (10°C)
	Pt100 RTD (to JIS C1604) (a=0.0039)	-328 to 950°F (-200 to 510°C)	18°F (10°C)
	Ni100 RTD Ni120 RTD (to DIN 43760) (a=0.006180)	-76 to 482°F (-60 to 250°C)	18°F (10°C)
	Ni100 RTD Ni120 RTD (to OIML, GOST) (a=0.006170)	-76 to 356°F (-60 to 180°C)	18°F (10°C)
	Pt50 RTD Pt100 RTD (to GOST) (a=0.00390)	-301 to 2012°F (-185 to 1100°C) -328 to 1562°F (-200 to 850°C)	18°F (10°C)
	Pt100 (Callendar van Dusen) Nickel polynomial Copper polynomial	The measuring range limits are specified by entering the limit values that depend on the coefficients A to C and R0.	18°F (10°C)
	Cu50 RTD Cu100 RTD (to OMIL, GOST) (a=0.004280)	-292 to 392°F (-180 to 200°C)	18°F (10°C)
	Cu50 RTD (to OMIL, GOST) (a=0.004260)	-58 to 392°F (-50 to 200°C)	18°F (10°C)

Input Type	Programmable Measuring Range Limits	Min. Span
RTDs: • Connection type: 2-, 3-, or 4-wire connection • Software compensation of cable resistance possible in the 2 wire system (0-30Ω) • Sensor cable resistance max. 50Ω per cable in the 3 and 4 wire system • Sensor current: ≤ 0.3mA		
Resistance Ω	10 to 400 Ω 10 to 2000 Ω	10 Ω
Thermocouples: Type A Type B Type E Type J Type K Type N Type R Type S Type T (to 60584, Part 1)	32 to 4532°F (0 to +2500°C) 104 to 3308°F (40 to +1820°C) -482 to 1832°F (-250 to +1000°C) -346 to 2192°F (-210 to +1200°C) -454 to 2501°F (-270 to +1372°C) -454 to 2372°F (-270 to +1300°C) -58 to 3214°F (-50 to +1768°C) -58 to 3214°F (-50 to +1768°C) -328 to 752°F (-200 to +400°C)	90°F (50°C)
Thermocouples: Type C Type D (to ASTM E988)	32 to 4199°F (0 to +2315°C) 32 to 4199°F (0 to +2315°C)	90°F (50°C)
Thermocouples: Type L Type U (to DIN 43710)	-328 to 1652°F (-200 to +900°C) -328 to 1112°F (-200 to +600°C)	90°F (50°C)
Thermocouple: Type L (to GOST)	-328 to 1472°F (-200 to +800°C)	90°F (50°C)
Thermocouples: • Internal cold junction (Pt100) or external programmable fixed value, -40 to 185°F (-40 to 85°C) • Accuracy of cold junction: ± 1.8°F (1°C) • Sensor current: 30nA • Maximum sensor wire resistance 10kΩ (If the sensor wire resistance is greater than 10 kΩ, an error message is output in accordance with NAMUR NE89.)		
Millivolt (mV)	-20 to 100 mV	5 mV

Inputs (row label spanning the left side of the table)

Basic Setup Continued

Device Tag: Custom identification name for this transmitter

....................Up to 32 characters

Connection type: RTD wiring connection (only available when an RTD Sensor type is selected)

.....................2-wire

.....................3-wire

.....................4-wire

Units: Temperature engineering units

..................°C, °F, K, Ohm, mV

Lower Range Value Output: Input the low end of the desired temperature range (4mA value).

...................-50000 to 50000

Upper Range Value Output: Input the high end of the desired temperature range (20mA value).

...................-50000 to 50000

Polynominal Coefficient R0, A, and B:

..................Only available when Polynom RTD Sensor type is selected. Enter coefficients for
        custom linearization of an RTD sensor

Calendar/van Dusen coefficient R0, A, B, and C: Only available when RTD Platinium (Callendar/van Dusen) sensor type is selected. Enter coefficients for custom linearization of an RTD sensor

Sensor lower limit: Only available when Polynom or Callendar/van Dusen RTD Sensor types are selected. Lower calculation limit for special sensor linearization.

Sensor upper limit: Only available when Polynom or Callendar/van Dusen RTD Sensor types are selected. Upper calculation limit for special sensor linearization.

2-wire compensation: Input the resistance value for two wire compensation in RTDs.

..................Only available when 2-wire compensation type is selected.

Reference Junction: Selection of the internal cold junction compensation, fixed value, or external comparison to a temperature value. (only available when a Thermocouple Sensor type is selected).

..................Internal measurement

..................Fixed value

..................Measured value ext. sensor

RJ preset value: Input fixed temperature comparison value with Fixed Value is selected.

..................-15 to 360

2-wire compensation: Input of cable resistance compensation (Only available when a RTD Sensor type with 2 wire connection is selected.

...................0.0 to 30.0 ohms

Failure mode: Input the desired output current value on a sensor break or short circuit

..................Max 21.5-23mA user selectable

..................Min. ≤ 3.6 mA
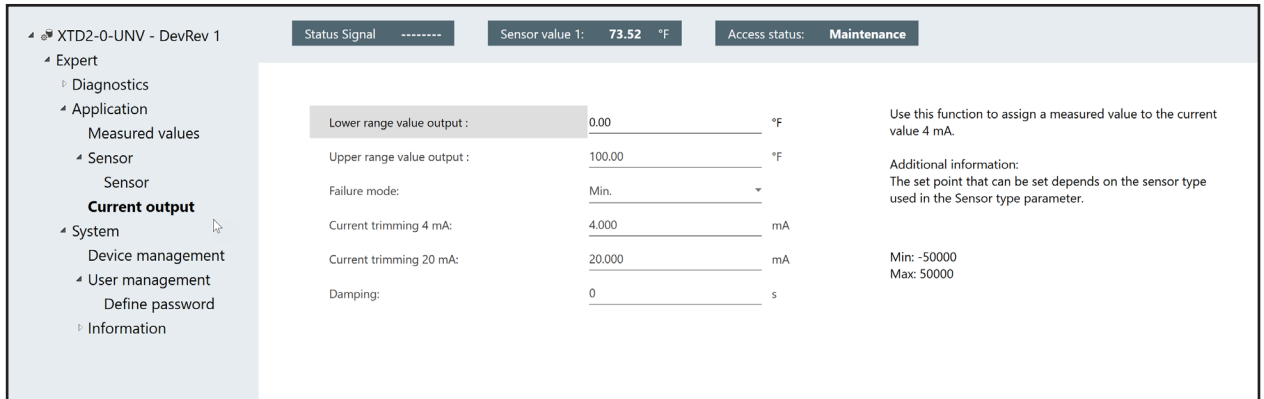
2.5 Expert Setup

Figure 7

Expert Setup includes all the Basic Setup parameters as well as the following:

Sensor offset: Add zero point correction to sensor measured value.

...................-18 to 18

Current trimming 4mA: Set the correction value for the current output at the start of the measuring range 4mA

....................3.85 to 4.15

Current trimming 20mA: Set the correction value for the current output at the end of the measureing range 20mA

...................19.85 to 20.15

Damping: set the time constant for the damping of the measured value

....................0 to 120 seconds

Diagnostics

Active Diagnostics: Displays current diagnostic message. If several messages are present at the same time, the message with the highest priority is displayed.

Operating Time: Length of time device has been in operation

Diagnostic List: Displays the current diagnostic messages

Event Logbook: Displays the previous 10 diagnostic messages.

Simulation:

Diagnostic event simulation: Allows the selection of diagnostic events to be simulated

Current output simulation: Switch simulation of the current output on and off.

Current output value: Input the value to be simulated by the current output simulation

.................3.58 to 23mA

Sensor Simulation: Switch the simulation of the process variable on and off

Sensor Simulation value: Input the simulated process variable.

.................-1E+20 to 1E+20

2.6 Device Settings and Password Protection

Device Settings

Alarm Delay: Set the delay time during which a diagnostics signal is suppressed before it is output.

.................0 to 5 seconds

Sensor: Set Diagnostic behavior and status signal for Sensor related diagnostic events.

Electronics: Set Diagnostic behavior and status signal for Electronics related diagnostic events

Configuration: Set Diagnostic behavior and status signal for Configuration related diagnostic events

Process: Set Diagnostic behavior and status signal for Process related diagnostic events

Minimum/maximum values: View and reset the min and max values of the sensor and device temperatures.

System

Device Management

Device Tag:Custom identification name for this transmitter

................Up to 32 characters

Mains filter: Select the mains filter for the A/D conversion

User Management

By default there is no write-protection on the device. By defining a password you enable write-protection and the defined password must be entered to switch into maintenance role to change settings.

Define Password: Enter and confirm a new password. Must consist of at least 4 and a maximum of 16 characters and can contain letters and numbers.
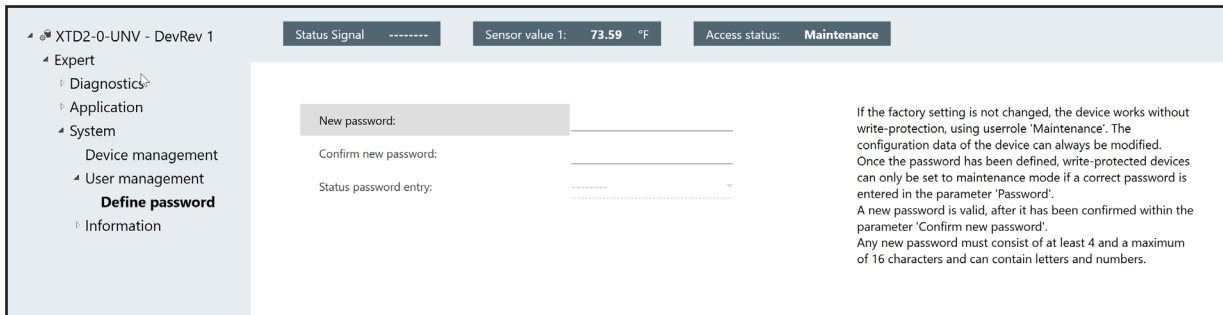

Figure 8

Enter Password: Select user role and input maintenance password

Change Password: Enter old password and setup new password

Delete Password: Select delete password which sets the device to no write-protection.

Reset Password: In the event you have forgotten the password, contact Automation Direct Technical Support for the reset password for your device.