

ConFIGM30™

User's Manual

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Overview

ConfigM30 provides an easy way to customize your gauge. Using a special serial cable (P/N: 1928*), a computer running Windows, and the **ConfigM30** program you can:

- View and print an as receive versus as left change report
- Load and save custom configurations
- Return the gauge to factory configuration
- Select pressure units (e.g., remove inches Hg if you never use this scale)
- Create special pressure units with custom icons
- Adjust (calibrate) the gauge
- Identify firmware version
- Password protect the gauge to prevent unauthorized changes
- Select your preferred H₂O water density: 4°C, 60°F, 68°F/20°C
- Store a message or identification number

***Note:** The Model 30 uses a special serial connector that requires the cable (P/N 1928) available from Crystal Engineering.

Features not available on your gauge will be grayed out in **ConfigM30**.

CAUTION: Changing the settings of your gauge using this program can cause the unit to display inaccurate readings or behave differently than the factory defaults. Only personnel qualified to make changes should do so.

Installation

ConfigM30 is distributed as a self-extracting Setup application. Launch **ConfigM30Setup.exe** and follow the on-screen prompts. If the program was provided on CD, run the SETUP.EXE from the **ConfigM30** folder and follow the on-screen prompts.

Operating Instructions

The first time you start **ConfigM30**, you must select the communications port to be used. Click on the drop down box under the **Connect** button and choose **Auto** to have **ConfigM30** automatically detect your gauge, or select an appropriate COM port for your computer.



Figure 1 – Select a port to connect to a 30 Series Calibrator.

Click **Connect** to establish connection to your gauge. If an error is displayed, check cables and verify that the gauge is operating.

If the connection is successful **ConfigM30** displays information retrieved from the gauge, such as the serial and model number, etc., and the current configuration of the gauge. Make any changes desired then click **Update Gauge** to commit those changes to the gauge.

If you have more than one gauge to be customized, click the **Disconnect** button, connect the serial cable to the next gauge to be customized and then click the **Connect** button. If no further changes are necessary, click the **Close** button to exit **ConfigM30**.

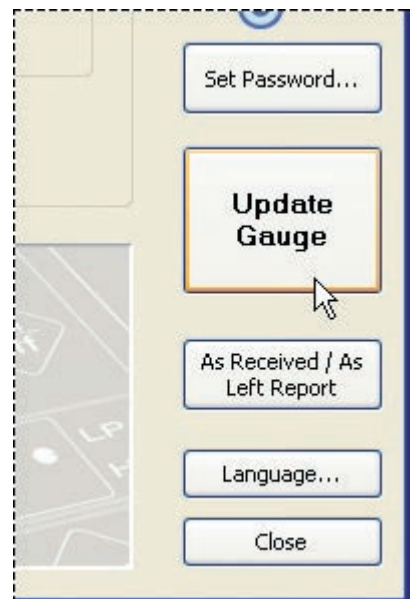


Figure 2 – The Update Gauge button commits your configuration changes.

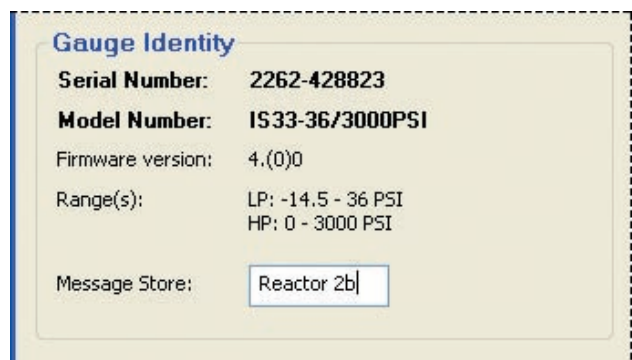
Settings

Settings are arranged in groups;

Gauge Identity

The only user setting is the “message store”—all other information is programmed by the factory.

Figure 3 – Store information specific to an individual gauge in the Message store text box.



The Gauge Identity area displays information specific to the gauge currently connected.

- **S/N:** The serial number as reported by the gauge.
- **Model:** Model of the gauge (not available on older models).
- **Range(s):** The pressure range of the gauge, reported in PSI regardless of the default unit.
- **Firmware Version:** The firmware version of the gauge.
- **Password Protected:** Indicates if the password protection has been abled for the gauge.
- **Message Store:** Message store is typically used as a place to enter an asset or tag or identification number, but can be used for other purposes like owner information. This information is available through **ConfigM30** and may also be used and reported by other Crystal Engineering software applications, such as FastCalXP or CrystalCalXP. Message store is limited to 16 characters.

Startup Messages

When turned on, the Model 30 will display a series of messages, typically the calibration due date and pressure ranges of the unit. Using **ConfigM30**, it is possible to change any of these messages as well as increase or decrease the number of displayed messages.

To change startup messages, click on the **Change...** button in the Startup Messages group.

Each message can be up to sixteen characters, broken into two lines of eight characters. Use spaces as needed to place characters on the second line.

You can use the **Move Up**, **Move Down**, and **Delete** buttons to move or delete messages. They will act on the active message, which is shown with a light grey background (for example, the first message in the dialog above).

When finished, click **OK** to save your changes or **Cancel** to discard any changes.

Figure 4 – Modify or create new startup messages in the Change Startup Messages dialog box.

Display Speed

As shipped from the factory, the Model 30 is typically configured for two updates to the display per second (Standard speed – 2 Hz). It is possible to increase or decrease this rate by changing the Display Speed value. Slower display speeds will result in a more stable reading, especially useful if you have defined a custom engineering unit that increases the resolution of the gauge.

WARNING: Changing the display speed to a faster value from the factory default may cause the display to become noisy, which may exceed specifications.

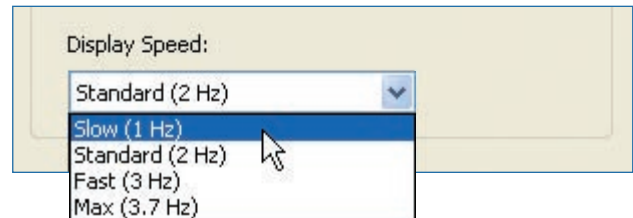


Figure 5 – Change the display to a slower value to achieve more stable readings.

Changing the display speed has two additional affects on the operation of the gauge: first, the rate messages are displayed during startup is directly affected by the display speed; and second, the rate at which values are sent out over the serial port is the same as the display speed.

Load and Save Configurations

Using the Load and Save Configuration buttons allows you to create custom setups of the gauge, such as enabling a limited set of engineering units or enabling other features in the gauge, and store that configuration for later use. Applications might include using a saved configuration to setup multiple gauges identically, or having different configurations for the same gauge to customize it for different applications. Configurations do not include the password or userspan value.

Because there are so many configurations possible with **Con-figM30**, the **Save Configuration...** button allows you to create configuration files and store any available **ConfigM30** settings—except for userspan values—to a file. These configurations can then be loaded onto any gauge using the **Load Configuration...** button, allowing you to quickly change a gauge to a stored configuration.

Configurations are stored as a files on disk, and so can be given any valid file name and then organized as desired.

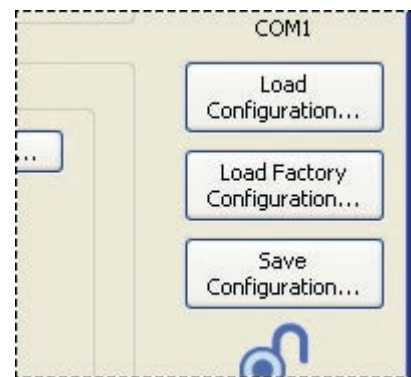


Figure 6 – Use the buttons on the right side of the dialog box to save custom gauge setups or reset a gauge to its factory defaults.

Engineering units

The Model 30 comes configured with a standard set engineering units, such as kPa, bar, and PSI. With **ConfigM30**, you can change, remove, add, and even create new engineering units. To start, click the appropriate **Change...** button to bring up the Change Engineering Units dialog box.

Change Engineering Units dialog

To remove a unit, select the unit to remove and click on the << **Remove** button. The unit will be moved from the Units in Gauge list to the Available Units list. Similarly, to add a unit, select the unit to add and click on the **Add >>** button. The unit will be moved from the Available Units list to the Units in Gauge list.

You can change the order of units by selecting a unit in the Units in Gauge list and clicking the **Move Up** or **Move Down** button.

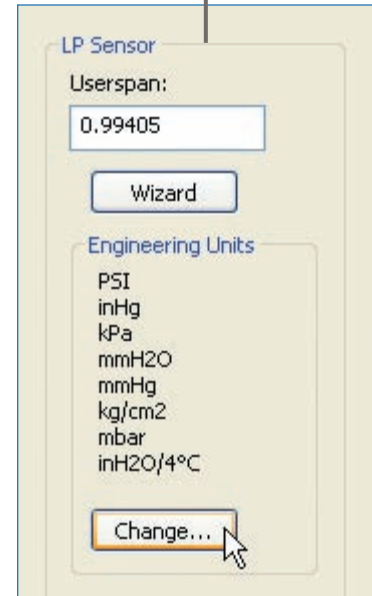
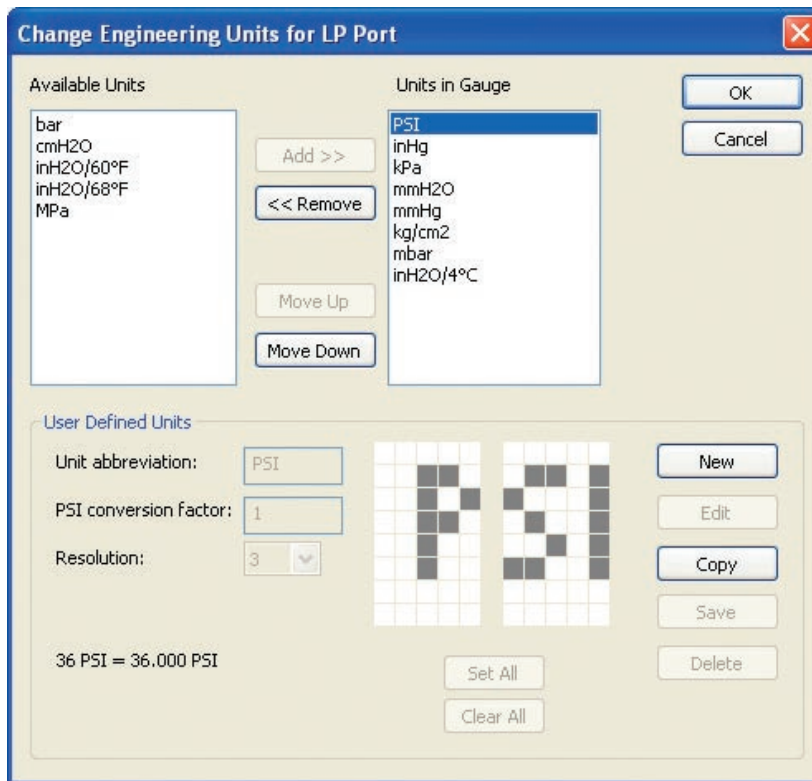


Figure 7 – Click one of the Change buttons to Open the Change Engineering Units dialog box.

Figure 8 – Engineering units can be customized for both the LP and HP ports from the Change Engineering Units for... dialog boxes. You can control which units are displayed on a gauge with the Add and Remove buttons. In addition, you can use the Move buttons set the order that units are displayed. The User Defined Units area of the dialog box allows you can create and define custom units.

To create a new unit, start with a blank unit by clicking **New** or copy an existing unit by first selecting it and clicking **Copy**. You can also edit an existing unit by clicking **Edit**, although standard units such as PSI and kPa cannot be edited.

Once in edit mode, set the unit abbreviation, PSI conversion factor, and resolution as appropriate. The icon for the unit is defined as a grid of squares. Use the mouse to turn on and off the squares to create the icon that will be displayed. Look at other pre-defined icons (such as PSI or kPa) for ideas on how to create new ones. Unit abbreviations and icons must be unique.

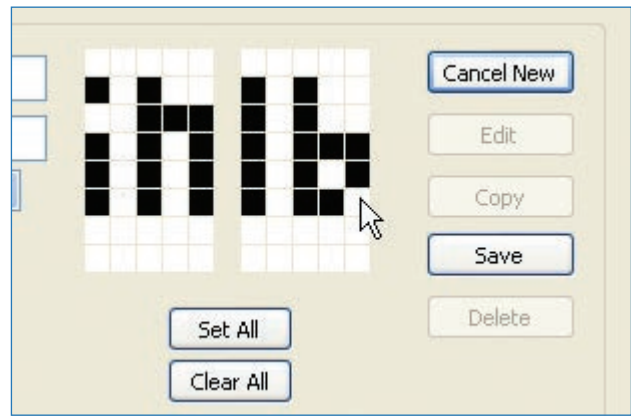


Figure 9 – Create custom unit icons by clicking to turn icon grid squares on and off.

Once finished defining the unit, click the **Save** button to save your changes.

To delete a custom unit, select the unit and click **Delete**. Standard units such as PSI and kPa cannot be deleted.

Once all changes have been completed, click the **Close** button to close the dialog. To discard any changes to the units in the gauge, click the **Cancel** button and no changes will be saved. However, edits, additions, and deletions to custom engineering units cannot be undone.

Transferring custom engineering units

When custom engineering units are defined, they are stored in a database that exists on the PC running **ConFigM30**. If a Model 30 gauge is programmed with a custom engineering unit and then connected to **ConFigM30** running on another machine, the name of the unit will not be recognized by **ConFigM30**, although it will successfully connect to the unit. However, the unit name is not stored in the gauge and therefore will be displayed as “Custom” with a number after it (e.g., “Custom 14”) to make the unit name unique. You can change the unknown unit names in the Change Engineering Units dialog.

If you wish to transfer the entire database of custom engineering units, you can copy the file named **ConfigM30Units.ini**, located in the directory where **ConFigM30** was installed, which is typically C:\Program Files\Cystal Engineering\ConfigM30. Simply copy this file to the second computer running **ConFigM30** (overwriting any existing **ConfigM30Units.ini**), and all of the custom units will be transferred. However, any unit that was defined on the second computer will be lost when its **ConfigM30Units.ini** is overwritten. There is no way to merge two **ConfigM30Units.ini** files.

You can also use configuration files to transfer units. By saving a configuration file on one PC and then loading it on another, any custom units in the configuration will be added to the custom units on the second PC. Existing custom units on the second PC will be preserved.

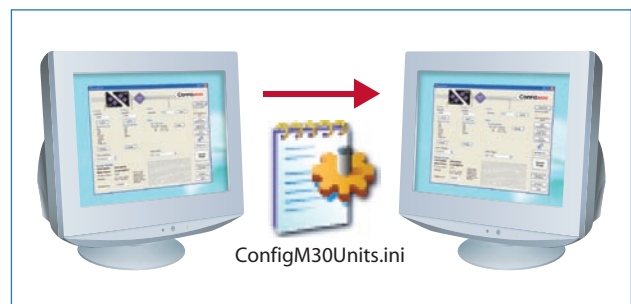


Figure 10 – Transfer a custom engineering units database from one computer to another by copying its **ConfigM30Units** file.

Water Reference selection

The Water Reference menu is used to change the inches of water temperature reference on the LP port. When inches of water is included in the engineering units of the LP port, the Water Reference list will be available, and allows you to easily change from 4°C (39.2°F), 15.6°C (60°F), and 20°C (68°F) water references.

Calibration Options

Userspan wizards remove the effort of calculating the userspan value by allowing you to enter two calibration points (typically the midpoint and full scale values), and calculate the userspan for you. The wizard can optionally read the displayed value directly from the Model 30, so all you need to enter is the applied pressure. To use the Userspan Wizard, simply click the appropriate Wizard button and follow the on-screen directions.

- **Userspan:** Usually set to 1 at the factory, and used to adjust the gauge for component aging. All readings are multiplied by this number. For instance, if the readings are low by 0.1%, set this number to 1.001 to correct the readings (1.001 is equivalent to 100.1%).

CAUTION: Changing the userspan value requires you to pierce the CALIBRATION VOID sticker on the back of the unit to enable the update. Once this sticker is pierced, you are responsible for the calibration accuracy of the gauge. Changes in userspan values should only be made by qualified personnel and equipment.

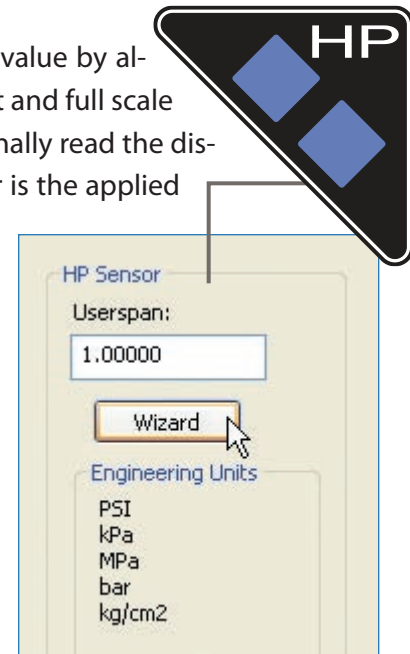


Figure 11 – Click one of the Wizard buttons to custom userspan options in the Userspan Wizard.

Password Protection

It is possible to password protect the Model 30 to prevent unauthorized changes to its calibration and configuration data. Once a gauge is password protected, the password is required for any updates to the gauge.

Passwords are four digit numbers, and can be anything other than 0000. Do not lose your password, as the only way to remove a lost password is to contact the factory. To set the password, simply click on the **Set Password...** button.



Figure 12 – Prevent unauthorized changes to a gauge with Password Protection.

In the event you lose the password, you will need to contact the factory for an unlock code, which will remove the password protection.

If the gauge already has a password assigned, you will be required to enter the old password. Then enter the new password in the New password box, and a second time in the Confirm new password box. Passwords can contain only digits, and cannot be 0000. Once accepted, **ConfigM30** will confirm that the password has been changed. The new password will not be written to the gauge until you press the Update Gauge button. When updating the gauge, it will ask for the password, which is the new password you just entered.

To remove an existing password, enter the current password and click the Remove Password button. This will clear the password and not require it to be entered on future gauge updates.

If you have forgotten the password, it is possible to clear the password by requesting an unlock code from the factory. Contact support to obtain the code. Once you have the code, click the Forgot Password button and follow the on-screen directions to remove the password.

As Received / As Left Report

ConfigM30 has a built-in report which details any changes you have made to the gauge. Clicking the **As Received / As Left Report** button will bring up a report of any changes made to the gauge. From this dialog, you can print the report or save it to a HTML file which can be viewed or printed later using any web browser, such as Microsoft Internet Explorer.

As Received Conditions		As Left Conditions	
Features:		Features:	
Peak Enabled		Peak Enabled	
Zero limit:1.998		Zero limit:200	
User unit factor:0.00999		User unit factor:0.00999	
User unit precision:4		User unit precision:4	
Userspan Enabled		Userspan Enabled	
TARE Disabled		TARE Disabled	
Rate Disabled		Rate Enabled	
Rate window size:6		Rate window size:6	
Averaging Disabled		Averaging Enabled	
Average window size:10		Average window size:10	
Userspan: 1.00000		Userspan: 1.00000	
Units:	PSI inH2O inHg	Units:	PSI inH2O inHg

Figure 13 – Generate As Received /As Left reports can be viewed on screen, saved, and then printed if desired.

Reset to Factory Defaults

When **ConfigM30** first makes changes to the gauge, it makes a copy of the settings in the gauge. It is possible to use those values to return the gauge to its factory condition by simply pressing the Load Factory Configuration button. This will return the gauge to the condition as shipped from the factory.

WARNING: Returning the gauge to factory defaults will also change the userspans back to their original values. If you wish to preserve the userspan values, you must write them down before restoring the gauge to factory defaults, and then re-enter the userspan values.

Language Selection

ConfigM30 supports alternate languages for the user interface. Some languages are available directly from the Crystal Engineering web site, while others can be obtained directly from your local Crystal Engineering distributor.

To choose an alternate language, click the **Language** button to open the Select Language dialog box. You must use the version of **ConfigM30** included with the language file. If you upgrade **ConfigM30** using the English version, it is very likely that the language file will no longer work and the program will start in English.

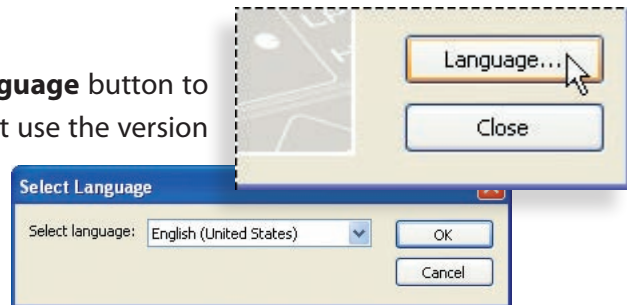


Figure 14 – Click the Language button to choose from a number of ConfigXP user interface languages.

Users of WinUserSpan

ConfigM30 provides all functionality of WinUserSpan, and WinUserSpan should no longer be used once **ConfigM30** has been used with the gauge. Doing so may interfere with how **ConfigM30** communicates with the gauge.

When returning your gauge to the factory

When you return your gauge to the factory for recalibration, any custom configurations of your gauge will be lost during the calibration or repair process. Because of this, if you wish to preserve the gauge configuration, use the Save Configuration function before returning the gauge to Crystal Engineering. When the gauge is returned, use the Load Configuration function to restore any customizations you might have for the gauge.

Service and Support

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Disclaimer of Warranty

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