

# ConfigM30 User's Manual

for 30 Series

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# Overview

## INTRODUCTION

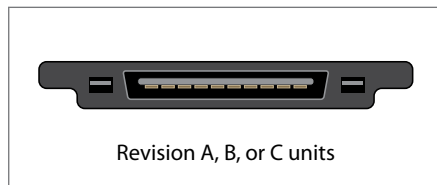
ConfigM30 provides an easy way to customize your gauge. Using a special serial cable (P/N: 1928) for Revision A, B, or C calibrators; a standard USB to micro USB cable for Revision D calibrators; and a computer running Windows and ConfigM30 you can:

- 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 H<sub>2</sub>O water density: 4°C, 60°F, 68°F/20°C
- Store a message or identification number

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

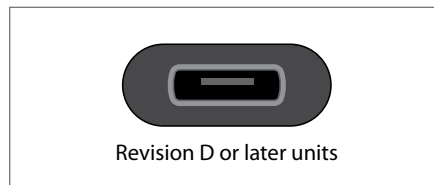
**! CAUTION:** Changing the settings of your gauge using this program can cause the unit to display inaccurate readings or behave differently than the factory defaults. Only personnel qualified to make changes should do so.

### Communication Port: Revision Identification



Revision A, B, or C units

30 Series Serial port



Revision D or later units

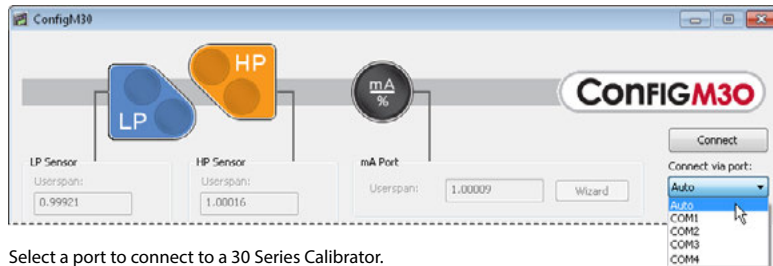
30 Series Micro-USB port

# Operating Instructions

## 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.

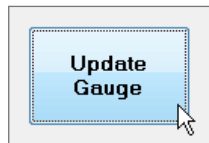
The first time you start ConfigM30, you must select the communications port to be used. Click on the drop down box under the **Connect button** and choose **Auto** to have ConfigM30 automatically detect your gauge, or select an appropriate COM port for your computer.



Select a port to connect to a 30 Series Calibrator.

Click the **Connect button** 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. The current configuration of the gauge. Make any changes desired then click the **Update Gauge button** to commit those changes to the gauge.



The Update Gauge button commits your configuration changes.

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.

# Settings

Settings are arranged in groups;

## GAUGE IDENTITY

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

**Gauge Identity**

**Serial Number:** 2262-144547

**Model Number:** IS33-36/3000PSI

Firmware version: 4.(0)0

Range(s): LP: -15 - 36 PSI  
HP: 0 - 3000 PSI

Message Store: -----

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

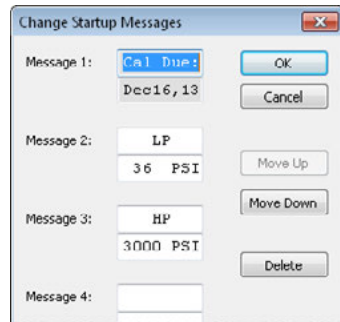
The Gauge Identity area displays information specific to the gauge currently connected.

- **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 enabled 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 [CrystalControl](#). 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 to open the Change Startup Messages dialog box.



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

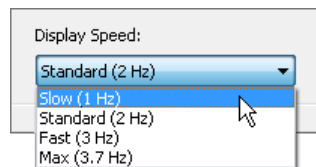
Each message can be up to sixteen characters, broken into two lines of eight characters. Use spaces as needed to place characters on the second line.

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.

## 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.

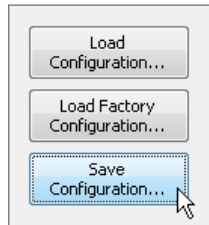


Changing the display speed has two additional affects on the operation of the gauge: first, the rate messages are displayed during startup is directly affected by the display speed; and second, the rate at which values are sent out over the serial port is the same as the display speed.

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

## LOAD AND SAVE CONFIGURATIONS

Using the *Load Configuration...* 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.



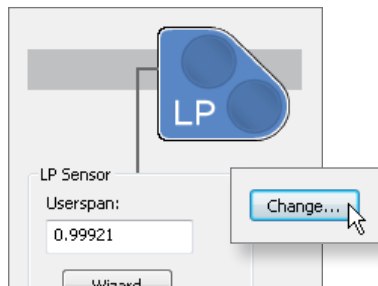
Use the buttons on the right side of the dialog box to save custom gauge setups or reset a gauge to its factory defaults.

Because there are so many configurations possible with ConfigM30, 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.

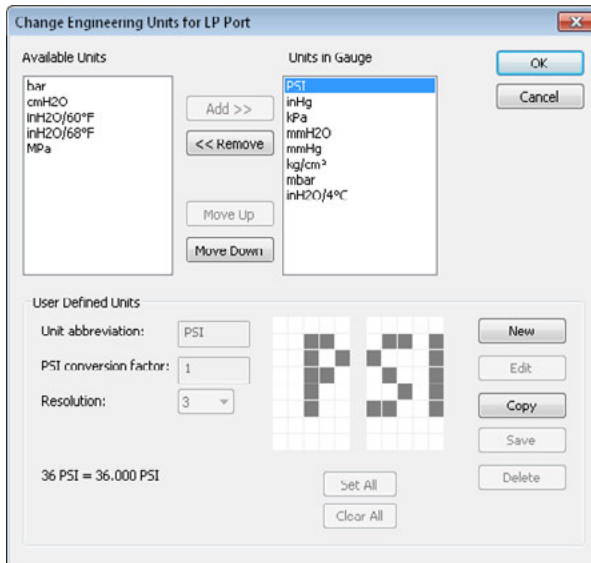
Configurations are stored as a files on disk, and so can be given any valid file name and then organized as desired.

## 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 open the Change Engineering Units dialog box.



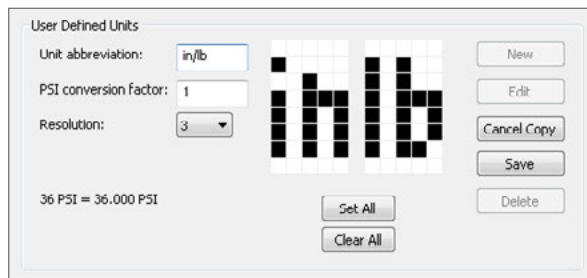
## Change Engineering Units dialog



- **Add a Unit:** Select the unit to add and click the **Add>> button**. The unit will be moved from the **Available Units** list to the **Units in Gauge** list.
- **Remove a Unit:** Select the unit to remove and click the **<< Remove button**. The unit will be moved from the **Units in Gauge** list to the **Available Units** list.
- **Change the order of units:** Select a unit in the **Units in Gauge** list and click the **Move Up** or **Move Down button**.
- **Create a New Unit:** Start with a blank unit by clicking **New** or by copying an existing unit (select an existing unit and clicking **Copy**). You can also edit an existing unit by clicking **Edit**. Standard units such as PSI and kPa cannot be edited.
- **Delete a Custom Unit:** Select the unit and click **Delete**. *Standard units such as PSI and kPa cannot be deleted.*

### ► Creating a New Unit

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

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.

**Note:** 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 box.

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\Crystal 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.



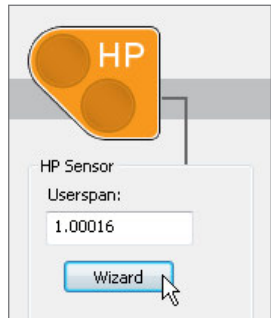
Transfer an entire database of custom engineering units with the *ConfigM30Units.ini* file.

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.

## 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 when you enter is the applied pressure. To use the Userspan Wizard, simply click the appropriate **Wizard button** and follow the on-screen directions.

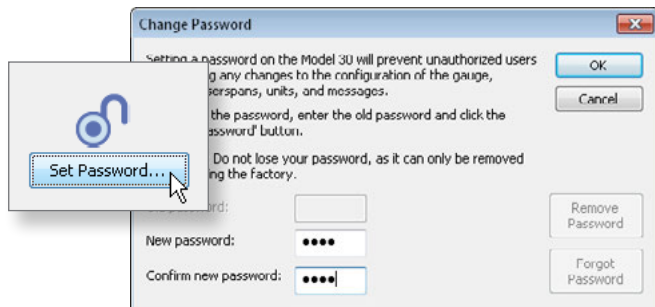
- **Userspan:** Usually set to 1 at the factory, and used to adjust the gauge for component aging. All readings are multiplied by this number. For instance, if the readings are low by 0.1%, set this number to 1.001 to correct the readings (1.001 is equivalent to 100.1%).

**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.

## 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**.



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

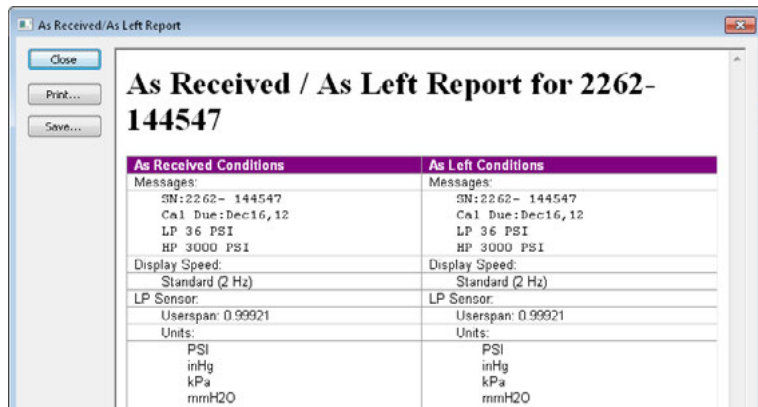
If the gauge already has a password assigned, you will be required to enter the old password. Then enter the new password in the **New password text box**, and a second time in the **Confirm new password text box**. Passwords can contain only digits, and cannot be 0000. Once accepted, ConfigM30 will confirm that the password has been changed. The new password will not be written to the gauge until you press the **Update Gauge button** in the ConfigM30 main window. 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 [Customer Service](#) 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.



## RESET TO FACTORY DEFAULTS

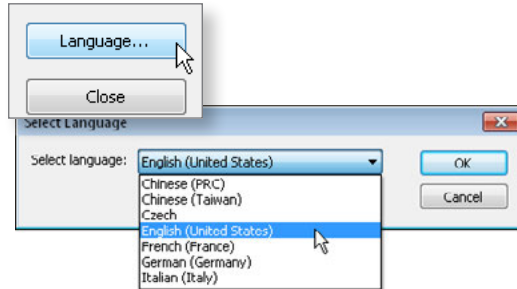
When ConfigM30 first makes changes to the gauge, it makes a copy of the settings in the gauge. It is possible to use those values to return the gauge to its factory condition by simply pressing the **(Load Factory Configuration)** button. This will return the gauge to the condition as shipped from the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



# Support

## TROUBLESHOOTING

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### Firmware Revision Dependencies

Some older versions of the firmware do not fully support all of the features provided in ConfigM30.

### 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.

## CONTACT US

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**Web** .....[ametekcalibration.com](http://ametekcalibration.com)

Send your comments to: [crystal@ametek.com](mailto:crystal@ametek.com)

## WARRANTY

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Good data processing procedure dictates that any Product be thoroughly tested with non-critical data before relying on it. The purchaser must assume the entire risk of using the Product. ANY LIABILITY OF CRYSTAL ENGINEERING CORPORATION FOR A DEFECTIVE PRODUCT WILL BE LIMITED EXCLUSIVELY TO REPLACEMENT OF PURCHASER'S COPY OF THE PRODUCT WITH ANOTHER COPY OR, IF SO ELECTED BY CRYSTAL ENGINEERING CORPORATION IN ITS SOLE DISCRETION, REFUND OF THE INITIAL AMOUNT PAID BY PURCHASER TO CRYSTAL ENGINEERING CORPORATION FOR THE PRODUCT. IN NO EVENT WILL CRYSTAL ENGINEERING CORPORATION OR ITS SUPPLIERS BE LIABLE TO PURCHASER FOR ANY CONSEQUENTIAL, INCIDENTAL OR SPECIAL DAMAGES, INCLUDING ANY LOST PROFITS OR LOST SAVINGS, EVEN IF CRYSTAL ENGINEERING CORPORATION WAS ADVISED OF THE POSSIBILITY OF SUCH DAMAGES, OR FOR ANY CLAIM BY ANY THIRD PARTY.

