

## Please Read before Installation (Combustion Pressure Analysis Software)

Thank you for purchasing the Combustion Pressure Analysis Software. This user's manual explains how to install the Combustion Pressure Analysis Software. This software application can be used to analyze the combustion pressure of gasoline engines, diesel engines, and gas engines. The user's manuals for each type of engine are included in the accompanying CD.

- Gasoline engine IM 720340-01EN.pdf
- Diesel engine IM 720340-02EN.pdf
- Gas engine IM 720340-03EN.pdf

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### Revisions

- 1st Edition: December 2012
- 2nd Edition: February 2014
- 3rd Edition: March 2015
- 4th Edition: October 2017
- 5th Edition: July 2019

### Package Contents

The following items are included in the package. If the wrong items have been delivered, if items are missing, or if there is a problem with the appearance of the items, contact your nearest YOKOGAWA dealer.

Item	Quantity	Note
Combustion Pressure Analysis Software setup disk	1	Medium: CD-ROM
This manual.	1	
USB license key	1	

### PC System Requirements

OS: Windows 7, Windows 8, Windows 8.1, Windows 10  
CPU: Core 2 Duo 2 GHz or higher  
Memory: 2 GB or more  
HDD: 2 GB free space or more  
USB port: 1 port or more (for USB license key)

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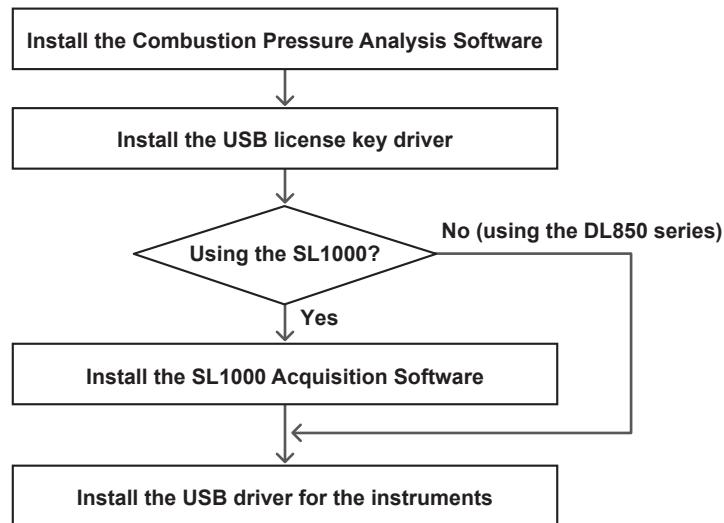
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## Installing the Software Programs

### Installation Procedure



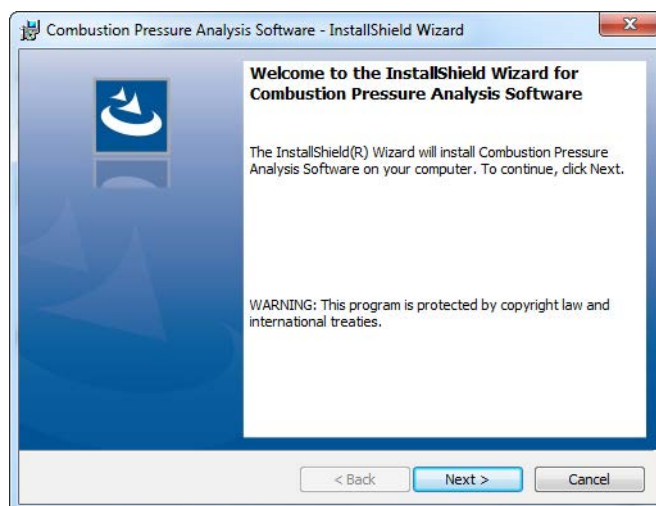
The installation procedure will be explained for the Windows 7 environment.

### Installing the Combustion Pressure Analysis Software

If a previous version of the software is already installed, you must remove it before installing this version. If you are using Windows 7 or later and install the Combustion Pressure Analysis software under “Program Files,” system files will be stored in Virtual Store.

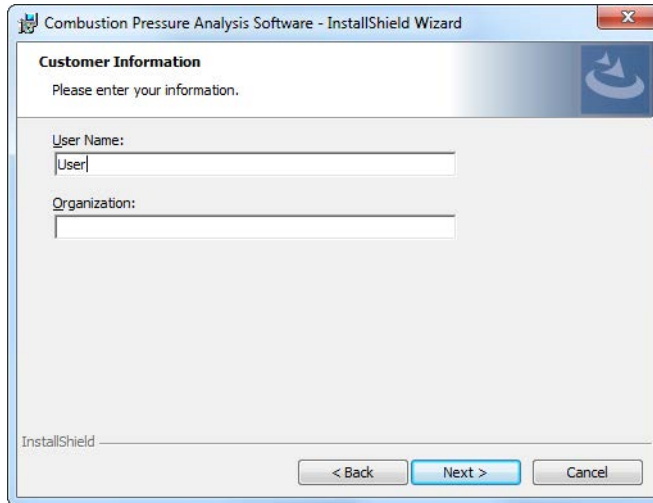
These files will not be deleted when you uninstall the software. Please delete them manually as necessary.

1. Insert the CD into the CD drive. The installer starts.  
If the installer does not start, open the CD-ROM drive in Explorer, and run Setup.exe, which is in the root folder.
2. The Installer starts. Click **Next**.

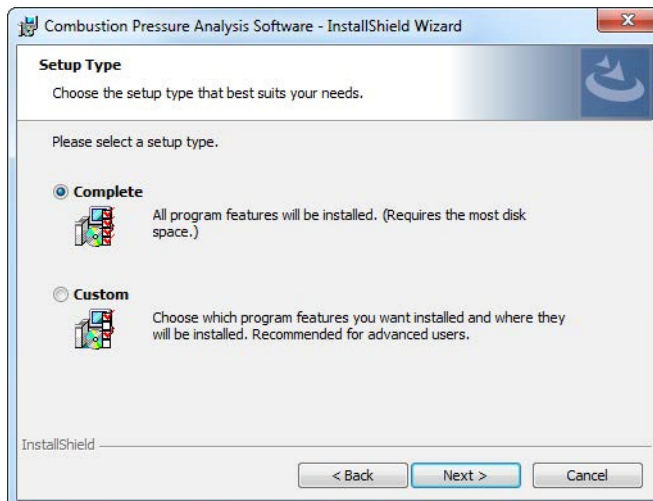


3. The Agreements screen is displayed and prompts you to indicate whether you agree with the conditions of use for the software. Once you have read and agreed to the conditions of use, place select **I accept the terms in the license agreement** option and then click **Next**.

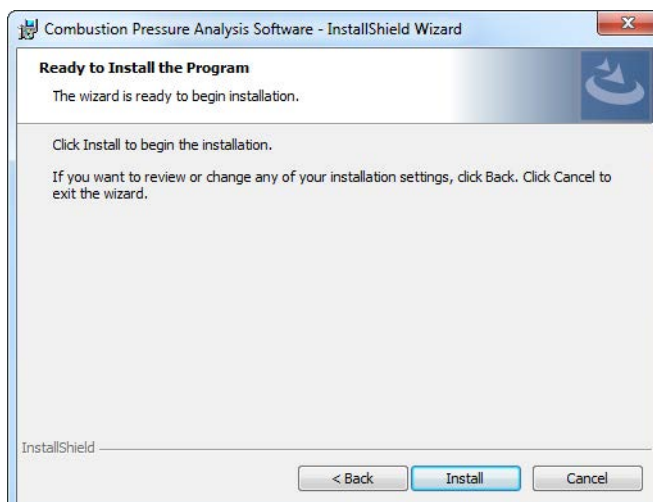
4. Input the name and organization, and then click **Next**.



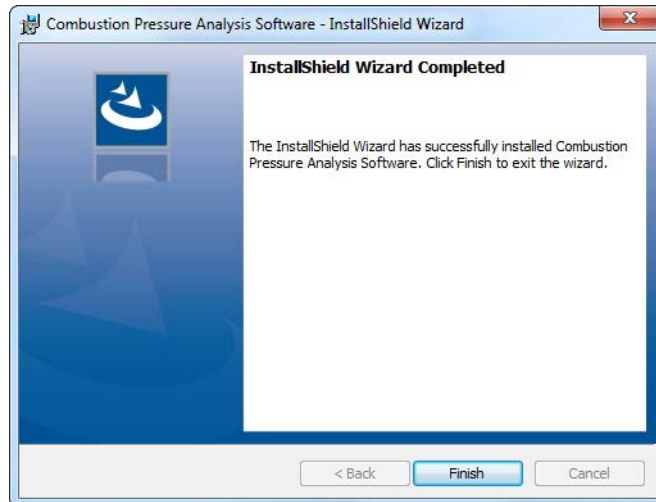
5. Select the setup type, and then click **Next**.



6. Click **Install**.



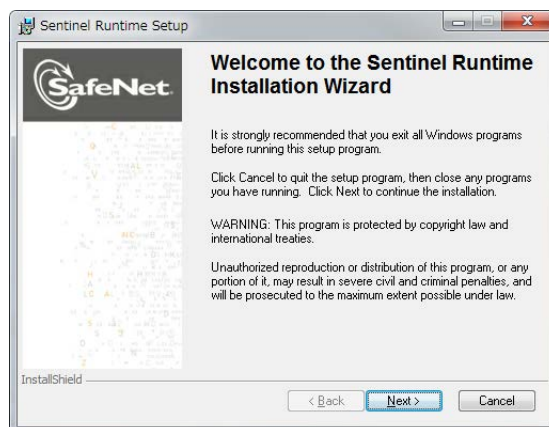
7. When the installation is complete, click **Finish**.



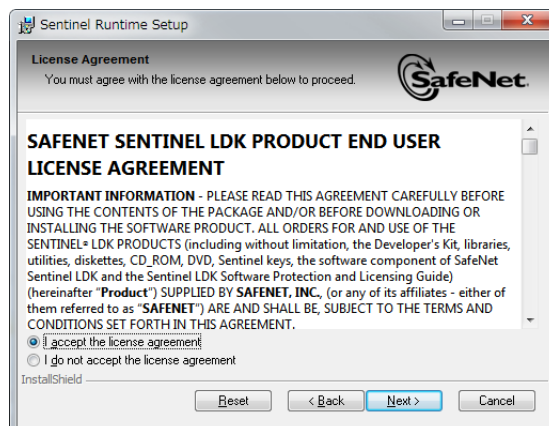
## Installing the USB License Key Driver

Install the USB license key driver.

1. Open the CD-ROM drive in Explorer, and run **HASPUserSetup.exe** in the "Driver\HASP" folder.
2. Click **Next**.

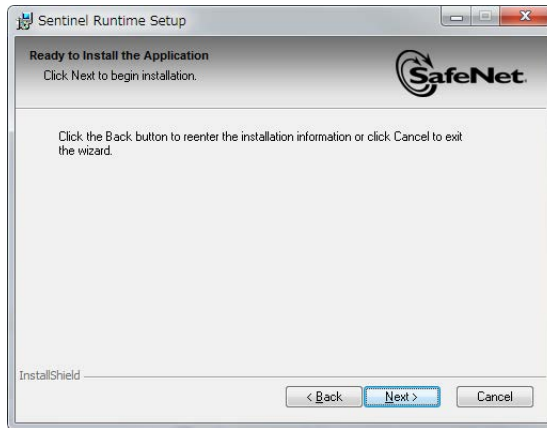


3. The Agreements screen is displayed and prompts you to indicate whether you agree with the conditions of use for the software. Once you have read and agreed to the conditions of use, please select **I accept the license agreement** option, and click **Next**.

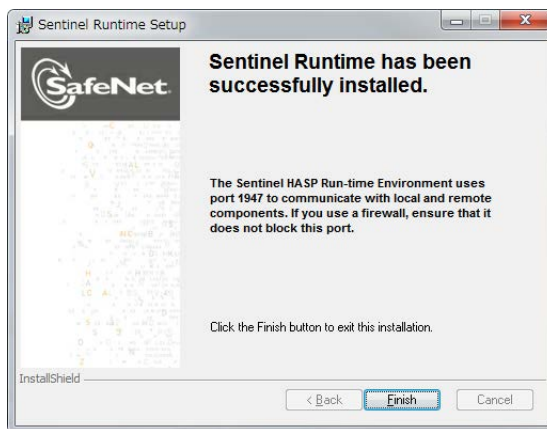


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4. Click **Next**.



5. The USB key driver is installed. Click **Finish**.



## Installing the SL1000 Acquisition Software

To connect the SL1000 to a PC, you need the SL1000 Acquisition Software (supplied with the SL1000 unit).

Use the Acquisition Software to configure the SL1000 unit.

Insert the Acquisition Software installation disk into the CD-ROM drive.

The installer starts automatically, and setup begins.

For details on the installation procedure, see chapter 2, "Installation," in the SL1000 Acquisition Software User's Manual (IM 720120-61EN).

### **Note**

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In the case of the DL850 series, configure the network from the DL850 series setup menu.

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## Installing the USB Driver for the Instruments

You need to install a dedicated USB driver if you want to connect a measuring instrument to a PC through the USB interface. The USB driver is in the "Driver¥YKMUSB" folder of the CD-ROM.

You can download the latest USB driver from the following web page.

<https://tmi.yokogawa.com/library/>

### Installing the USB Driver

Run **Setup.exe** in the "Driver¥YKMUSB" folder of the CD-ROM. The installation wizard starts. For details on the installation procedure, see the manual (IM B9852UT-01E) in the YKMUSB folder.

#### **Note**

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Install the driver when you connect the DL850 series or SL1000 unit to the PC for the first time.  
If the driver is already installed, you do not need to install it again.

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## Initial Measuring Instrument Setup

### DL850 Series

#### DL850 Series Version

Check that the DL850 series firmware version is 2.10 or later. You can check the firmware version on the Overview screen of the DL850 series. (See “Checking the Serial Number” on the next page.)

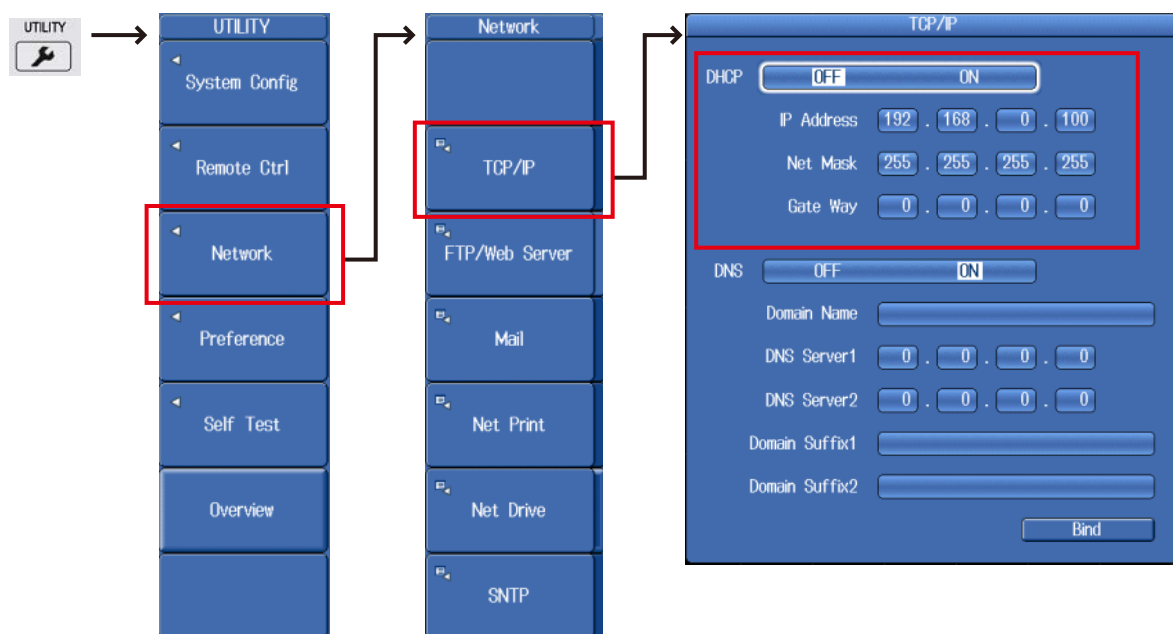
If the firmware version is earlier than 2.10, download the latest firmware from the YOKOGAWA website (<https://tmi.yokogawa.com/library/documents-downloads/firmware/dl850-series-scopecorder/>), and update the firmware. For the updating procedure, see the manual that is downloaded along with the firmware.

#### Connecting a DL850 Series to a PC over a LAN

- **Setting the IP Address**

Select **UTILITY > Network > TCP/IP > DHCP:OFF**.

Set the IP address and Net mask.



#### Note

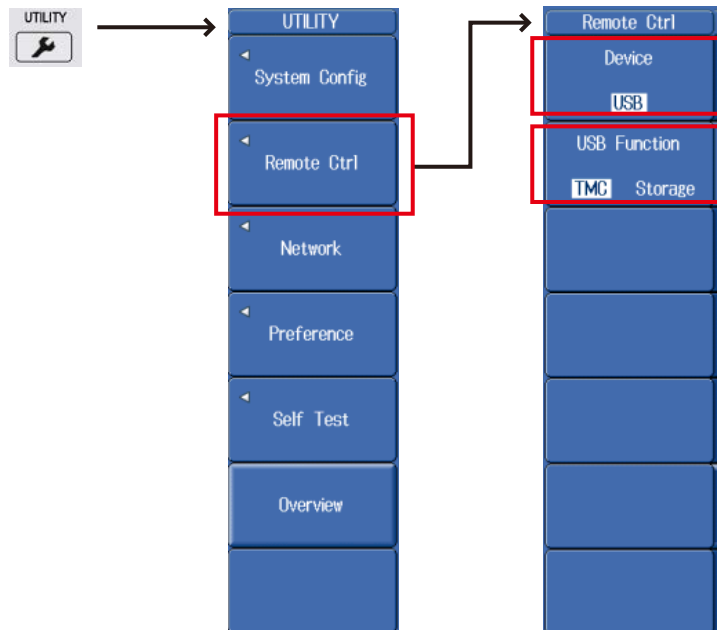
If you are using DHCP to connect the DL850 series, check the IP address that has been assigned to the DL850 series, and set the connection settings of the software accordingly.

## Connecting a DL850 Series to a PC over a USB

- **Remote Control Device Setup**

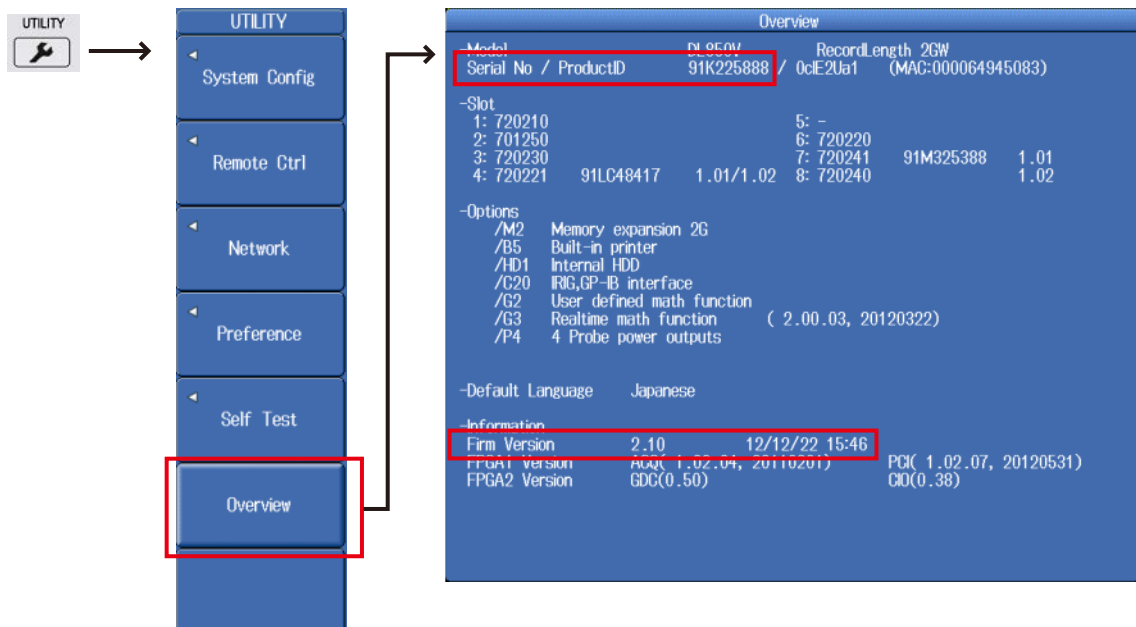
Select **UTILITY > Remote Ctrl > Device > USB**.

Set USB Function to **TMC**.



- **Checking the Serial Number**

Press **UTILITY > Overview**. Note the serial number. You will use this number when you connect from the application. Also you can check the firmware version (Firm Version).



## SL1000

### Connecting an SL1000 to a PC over a LAN

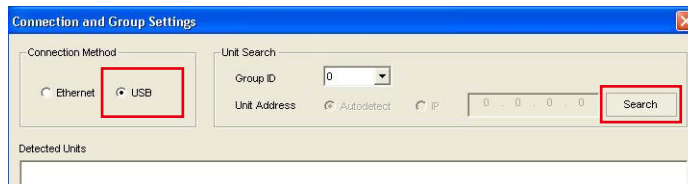
To connect the SL1000 unit to a PC over Ethernet, you must set the SL1000 unit's communication settings.

You do not have to configure these settings if you are connecting over a USB or if you are connecting over Ethernet with the default SL1000 unit settings (DHCP is ON). Configure the settings while the SL1000 is connected to the PC through a USB.

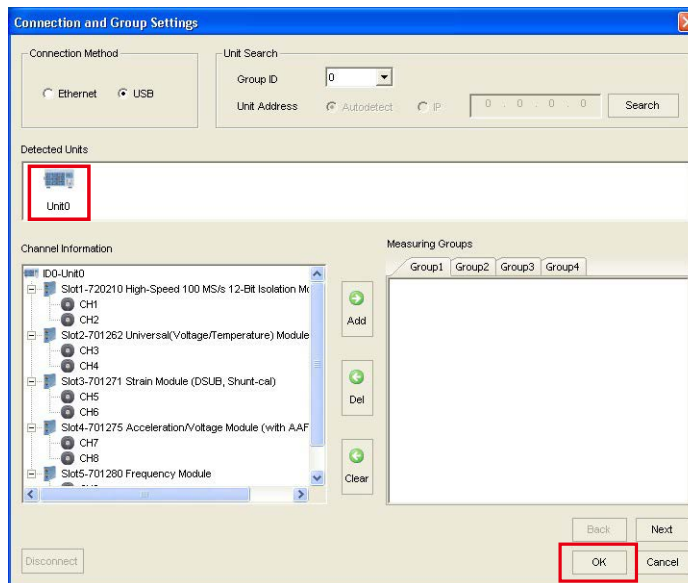
#### • Configuring Communication Settings from the Acquisition Software

1. Double-click the desktop icon  to start the Acquisition Software.

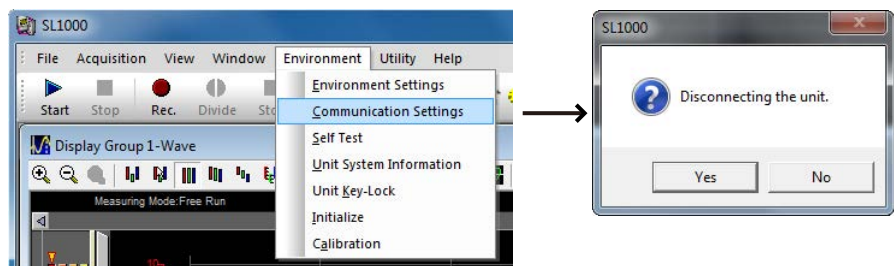
The system configuration screen appears. Select **USB**, and click the **Search** button.



2. When the SL1000 unit that you want to connect to is found, click the **OK** button.

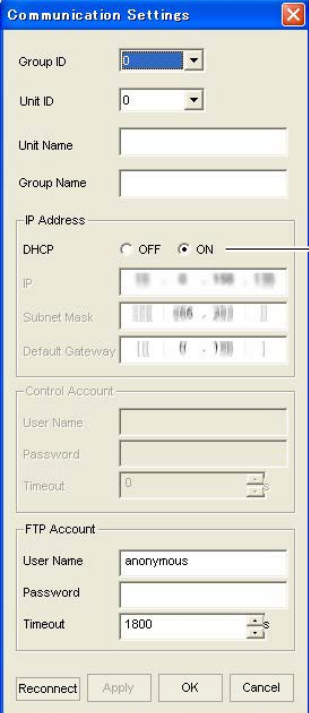


3. On the **Environment** menu, click **Communication Settings**. In the disconnection dialog box, click **Yes**.



The communication settings screen appears.

4. Set the group ID and unit ID of the network-connected SL1000 that you want to set.



The screenshot shows the 'Communication Settings' dialog box with the following fields and annotations:

- Group ID:** A dropdown menu with '0' selected. Annotation: "Select the group ID and unit ID of the SL1000 unit that you want to configure the communication settings for."
- Unit ID:** A dropdown menu with '0' selected. Annotation: "Select the group ID and unit ID of the SL1000 unit that you want to configure the communication settings for."
- Unit Name:** An empty text field. Annotation: "No need to set these items"
- Group Name:** An empty text field. Annotation: "No need to set these items"
- IP Address Section:**
  - DHCP:** Radio buttons for OFF and ON. Annotation: "Turn on or off DHCP. If you set it to ON, you are finished with the settings."
  - IP:** A text field with '192.168.1.100'. Annotation: "Set the IP address, subnet mask, and default gateway (when DHCP is set to OFF)."
  - Subnet Mask:** A text field with '255.255.255.0'. Annotation: "Set the IP address, subnet mask, and default gateway (when DHCP is set to OFF)."
  - Default Gateway:** A text field with '192.168.1.1'. Annotation: "Set the IP address, subnet mask, and default gateway (when DHCP is set to OFF)."
- Control Account Section:**
  - User Name:** An empty text field. Annotation: "You cannot set these."
  - Password:** An empty text field. Annotation: "You cannot set these."
  - Timeout:** A spinner box with '0'. Annotation: "You cannot set these."
- FTP Account Section:**
  - User Name:** A text field with 'anonymous'. Annotation: "No need to set these items"
  - Password:** An empty text field. Annotation: "No need to set these items"
  - Timeout:** A spinner box with '1800'. Annotation: "No need to set these items"

Buttons at the bottom: Reconnect, Apply, OK, Cancel.

### Setting the IP Address

If you set the DHCP server feature to ON, you do not have to set the IP address, subnet mask, or default gateway.

If you set the DHCP server feature to OFF, set the appropriate IP address, subnet mask, and default gateway for the network that you want to connect to.

On a network with a DHCP server, you can turn on the DHCP server feature. If you do, the IP address and other network settings will be assigned automatically when you connect the SL1000 to the network.

### Connecting an SL1000 to a PC over a USB

If you are connecting over a USB, you do not have to configure any settings.

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## Connecting the Signals to the Measuring Instrument

The Combustion Pressure Analysis Software uses angular pulses as an external clock signal to make measurements in line with the angular resolution. Measurements start according to the TDC pulse signal trigger setting. Examples of how to connect signals to the measuring instrument are provided below.

### DL850 series example



### SL1000 example



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### Note

- For a multi-cylinder engine, apply the cylinder pressure signals to consecutive channels starting with CH1.
  - On the DL850 series, install the measurement modules consecutively from the first slot, without empty slots in the middle. Do not install modules that are not supported.
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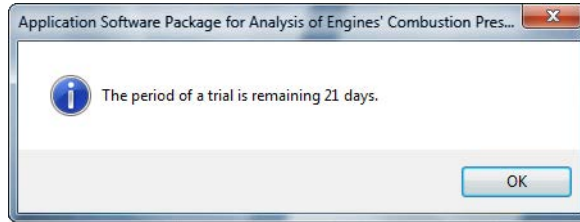
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## USB Key

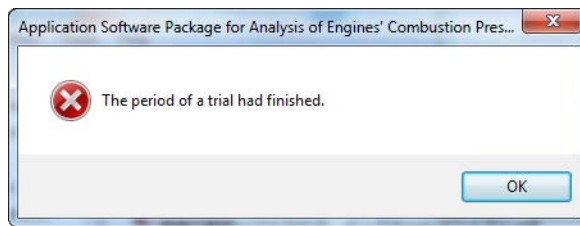
To run the Combustion Pressure Analysis Software, insert the accompanying USB license key to a USB port on the PC.

### Note

If you run the software without the USB license key, it will run as a 30-day trial version. The remaining trial days will appear every time you start the software.



If the trial period expires, the following message will appear, and the software will not run.



If you remove the USB license key when the software is running, the following message will appear.

Connect the USB license key, and click **Retry**.

To close the application, click **Cancel**.

