

**Field Communication Software  
CommStaff  
Model: CFS100  
(Common Edition)  
User's Manual**



Yamatake Corporation

## **NOTICE**

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# Safety precautions

## Introduction

Proper installation, operation and maintenance are essential to ensure safety during the use of your CommStaff. Do not use CommStaff before completely reading and fully understanding the safety precautions explained in this manual, and be sure to follow the instructions on installation, operation and maintenance.

## Verifying your order

Upon receiving CommStaff, check that the specifications match what you ordered, and check for any damage to the product that might have occurred during shipping.

Verify that the package contains the following items:

- Installation CD-ROM
- Quick start guide
- CFS100 SFN/DE communication interface (optional)

## Transporting CommStaff

To avoid damage, transport CommStaff in its original packaging until it arrives at the installation site.

## Storing CommStaff

Select a storage site that satisfies the following conditions:

- Not exposed to rainwater
- Not subject to vibration or shock
- As close as possible to normal temperature and humidity (approx. 25°C and 65% RH)

Store CommStaff in its original packaging if possible.

## Use of cellular phone or radio transceiver

Using a cell phone or radio transceiver near CommStaff may affect CommStaff's performance due to radio interference, depending on the transmitting power and the frequency.



# Chapter 1. Overview

## 1-1. Introduction

CommStaff is a tool for communicating with Yamatake smart field devices (DSTJ and others) that enables configuration of device settings. It is a software product that operates on Windows PCs. CommStaff communicates with Yamatake smart field devices using a USB interface connected to a Windows PC, which is then connected by communications cable to the USB port of a device.

CommStaff supports Yamatake's proprietary SFN/DE communication protocol as well as the HART communication protocol.

\*HART is a registered trademark of the HART Communication Foundation.

## 1-2. Important Notes

\* When changing connected devices

CommStaff continues communicating with the device when displaying dynamic values, such as pressure, so that it can continuously update these values. If you remove the communications cable to change the device during this communication, an error will occur.

Exit CommStaff before detaching the communications cable from the device, and then start CommStaff again after connecting the communications cable to the new device.

\* Do not use CommStaff while the PC is connected to AC power.

\* If the plastic case of the communication interface becomes cracked, do not use CommStaff .

\* Handling the communication interface cable clamp unnecessarily may lead to malfunction of the latch. Handle the cable clamp only as necessary.

## 1-3. Package Contents and Part Names

The CommStaff product consists of the following items.

- Installation CD-ROM

The CD-ROM contains an installer to install the CommStaff application on your Windows PC. It also includes the operating manual and the instruction manual of the device in PDF format.

Store the CD-ROM away from direct sunlight.

- Quick start guide

A simple guide for initial setup of CommStaff.

- CFS100 SFN/DE communication interface (optional)

A USB-type SFN/DE communication interface. Connect this interface to a USB port on the PC.

Caution: Do not connect the communication interface before you have installed the CommStaff software on the PC. Otherwise, the interface will fail to find the driver and the program will not operate correctly.

## 1-4. Operating Environment

- Use CommStaff within the following ranges.

Environmental conditions (CFS100 SFN DE communication interface)

Operating temperature 0 to 50 °C; operating humidity 5 to 95 %

Note: If the PC has a more limited operating environment range, use CommStaff within that range.

## 1-5. System Requirements

### 1-5-1. PC

Use a PC that meets the following requirements.

OS	Windows 7 32-bit Professional Japanese or English version
CPU	Earlier than the 2010 Core i series
Hard disk drive space	500 MB or more
Communication port	USB 2.0 or later

Although CommStaff was also designed for use with Windows XP, operation with Windows XP has not been tested.

### 1-5-2. Communication Interface

Use a communication module that meets the following requirements.

SFN/DE communication interface	CFS100 SFN DE Yamatake model number: 80345962-001
HART communication interface	MACTek VIATOR USB HART Interface MACTek model number: 010031

Regarding the HART communication interface, although CommStaff was designed for use with other similar products, operation with other products has not been tested.

# Chapter 2. Installing/Uninstalling CommStaff

## 2-1. Preparation for Installation

### 2-1-1. Items Required

Have the following items on hand before beginning installation.

- PC
  - \* Check that it meets the system requirements described in Section 1-5-1.
  - \* A CD-ROM drive is necessary for installation.

## 2-2. Installation

### 2-2-1. Installation Overview

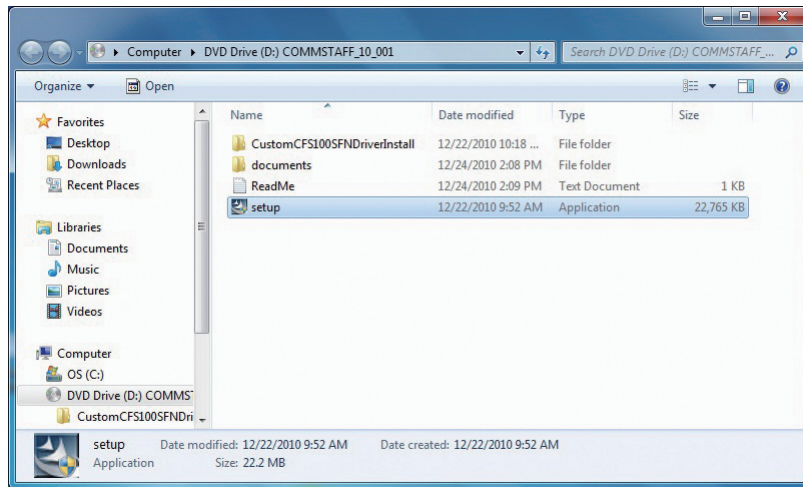
1. Put the CommStaff installer CD-ROM in the CD-ROM drive of the PC.
2. Execute the following two installers.
  - 1) CommStaff application installer  
Run Setup.exe, located in the root directory of the installer CD-ROM. (For correct installation in the case of an upgrade, first uninstall the old version and then install the new version.)
  - 2) SFN communication interface driver installer  
Run CFS100SFNInstaller.exe, located on the installer CD-ROM in the ¥CustomCFS100SFNDriverInstall subfolder.
3. If using the HART communication interface, install the driver supplied with it.

This completes the installation.

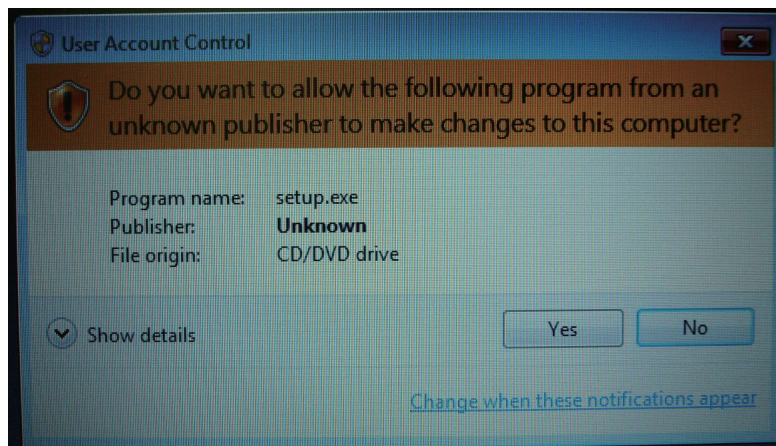
## 2-2-2. Installation in Detail

Installation of the CommStaff application

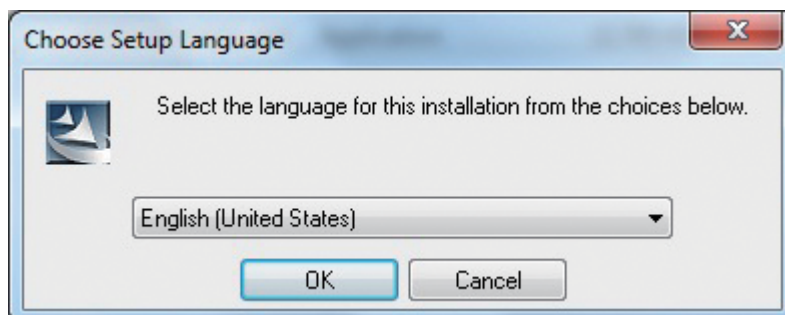
Execute Setup.exe in the root directory of the installer CD-ROM.



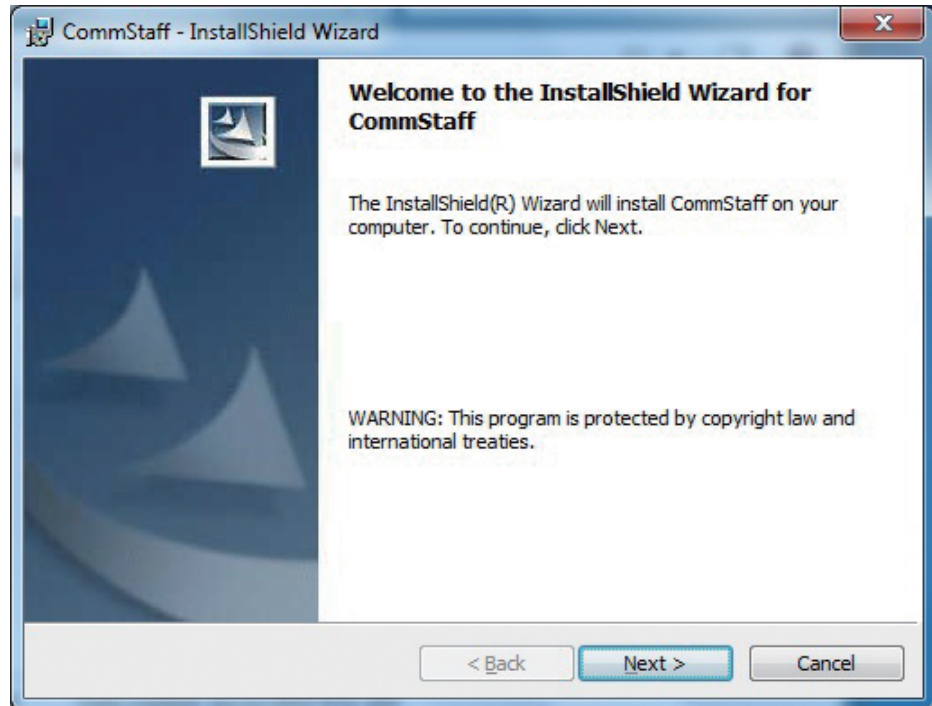
The message “Do you want to allow the following program from an unknown publisher to make changes to this computer?” appears. Click [Yes].



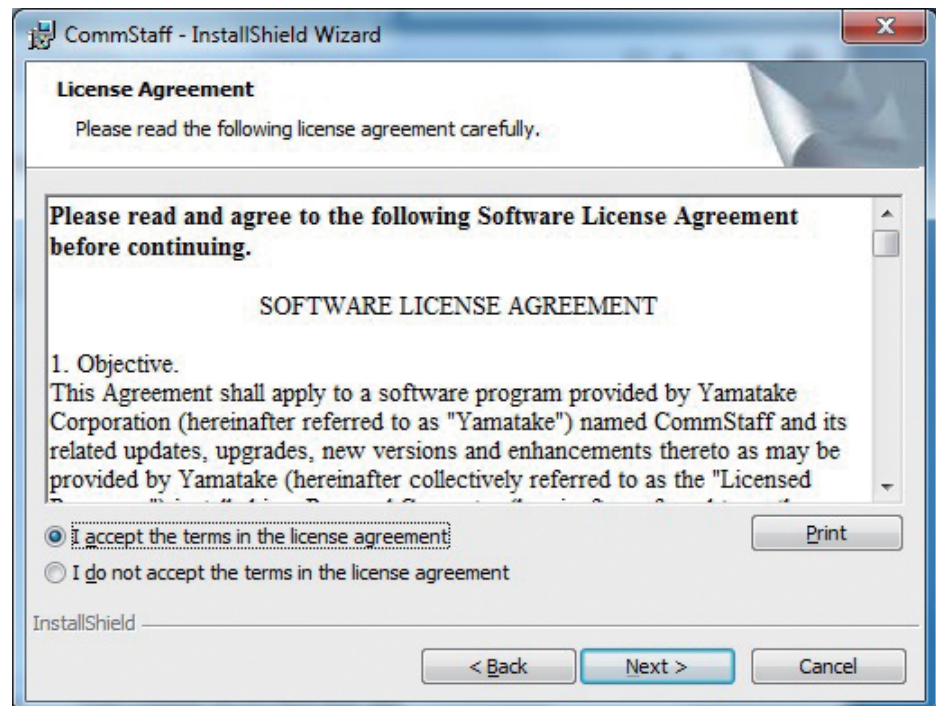
The language selection screen appears. Click [OK] to continue.



Click [Next].



Read the License Agreement. If you accept the terms of the License Agreement, select “I accept the terms in the license agreement” and click [Next] to continue.



Enter the user name, organization, and license key, and click [Next] to continue.

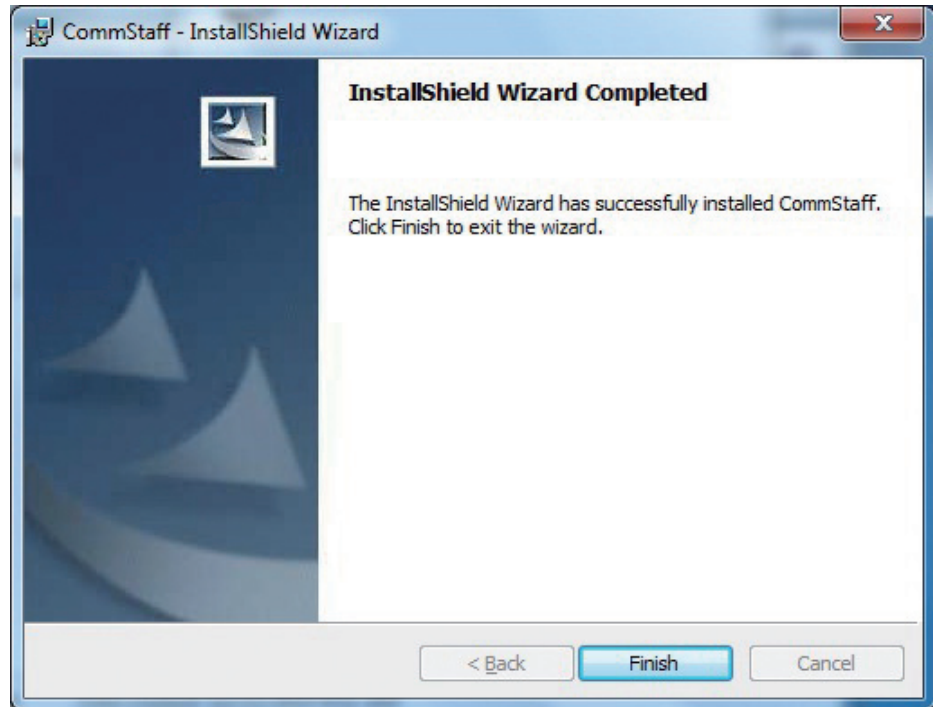
The serial number. is printed on the sticker on the CommStaff Installer CD-ROM case as a license key.

The screenshot shows a Windows-style dialog box titled "CommStaff - InstallShield Wizard". The main heading is "Customer Information" with the instruction "Please enter your information." Below this, there are three input fields: "User Name:" containing the text "azbil", "Organization:" which is empty, and a five-part license key field with hyphens between empty boxes. Underneath, the text "Install this application for:" is followed by two radio button options: "Anyone who uses this computer (all users)" (which is selected) and "Only for me (azbil)". At the bottom left, the text "InstallShield" is visible. At the bottom right, there are three buttons: "< Back", "Next >" (highlighted in blue), and "Cancel".

Click [Install].

The screenshot shows the same "CommStaff - InstallShield Wizard" dialog box, now at the "Ready to Install the Program" step. The heading is "Ready to Install the Program" with the instruction "The wizard is ready to begin installation." Below this, there is a paragraph of text: "Click Install to begin the installation. If you want to review or change any of your installation settings, click Back. Click Cancel to exit the wizard." At the bottom left, the text "InstallShield" is visible. At the bottom right, there are three buttons: "< Back", "Install" (highlighted with a blue border), and "Cancel".

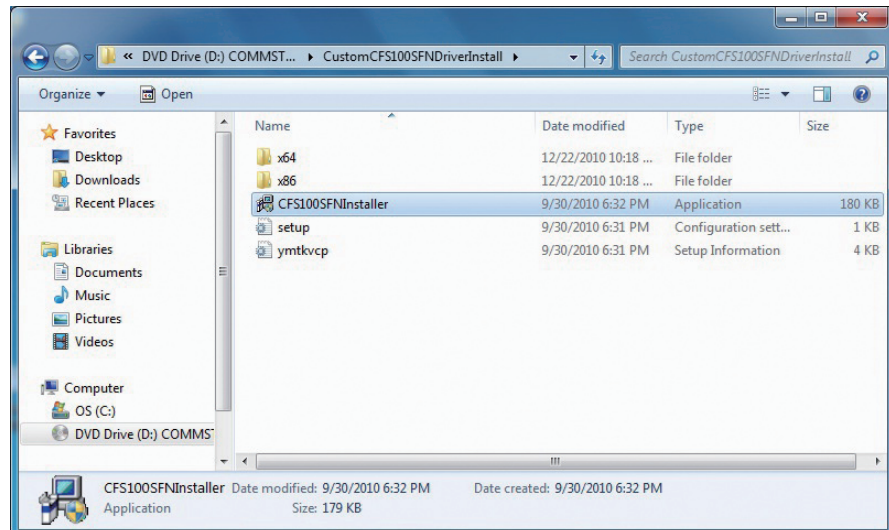
Click [Finish].



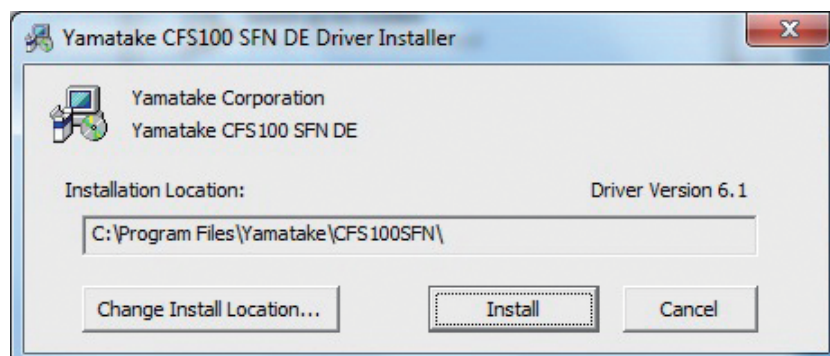
This completes installation of the CommStaff application.

Next, install the driver for the SFN communication interface.

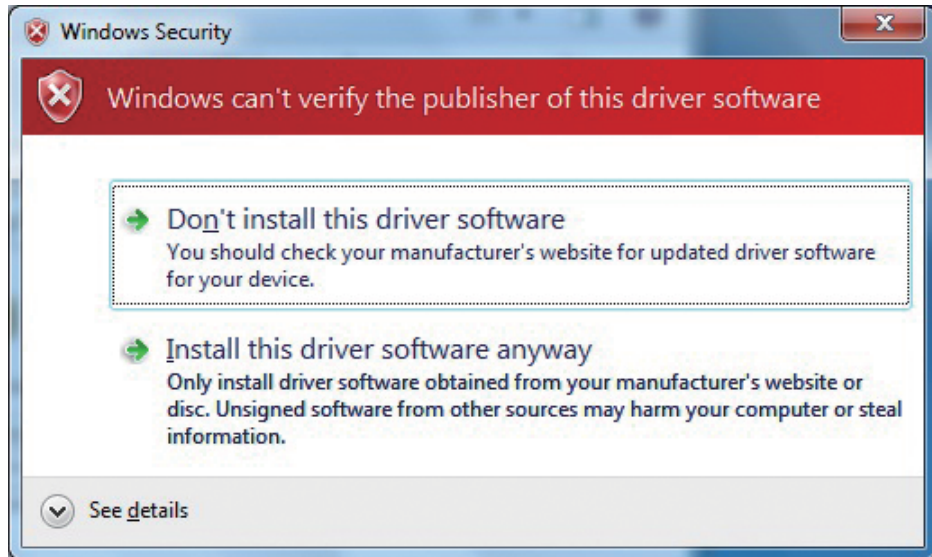
Run CFS100SFNInstaller.exe in the %CustomCFS100SFNDriverInstall subfolder of the installer CD-ROM.



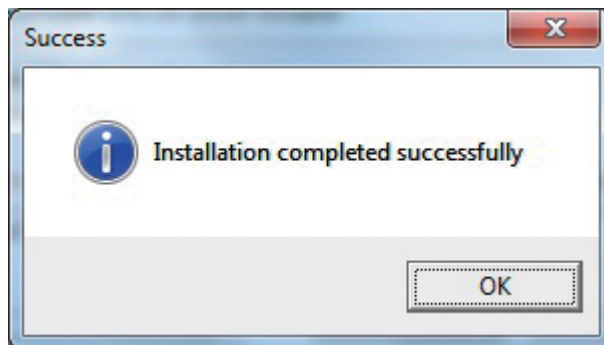
Click [Install].



Click “Install this driver software”.



Click [OK].



This completes installation of the SFN communication interface driver.

If using the HART communication interface, install the driver software supplied with it.

## 2-3. Uninstalling CommStaff

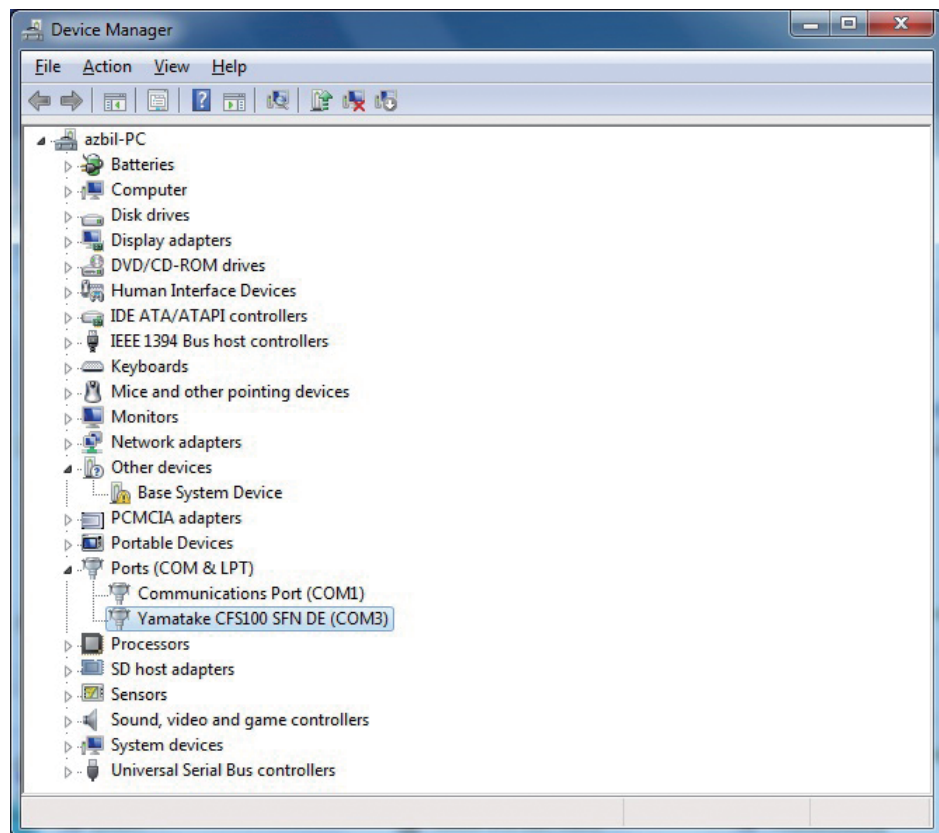
In the Windows Control Panel, go to Programs and Features and delete the target application program from the program list.

## Chapter 3. Checking the Communication Interface Connection

On completion of software installation, check the communication interface connection.

1. Connect the communication interface to the USB port of the PC.
2. If the driver software was installed correctly, the PC recognizes the communication interface as a COM port.
3. In Control Panel, open the Device Manager and verify that the communication interface is recognized by the PC correctly.

Open the ports (COM and LPT) and check that the connected communication module is recognized correctly.

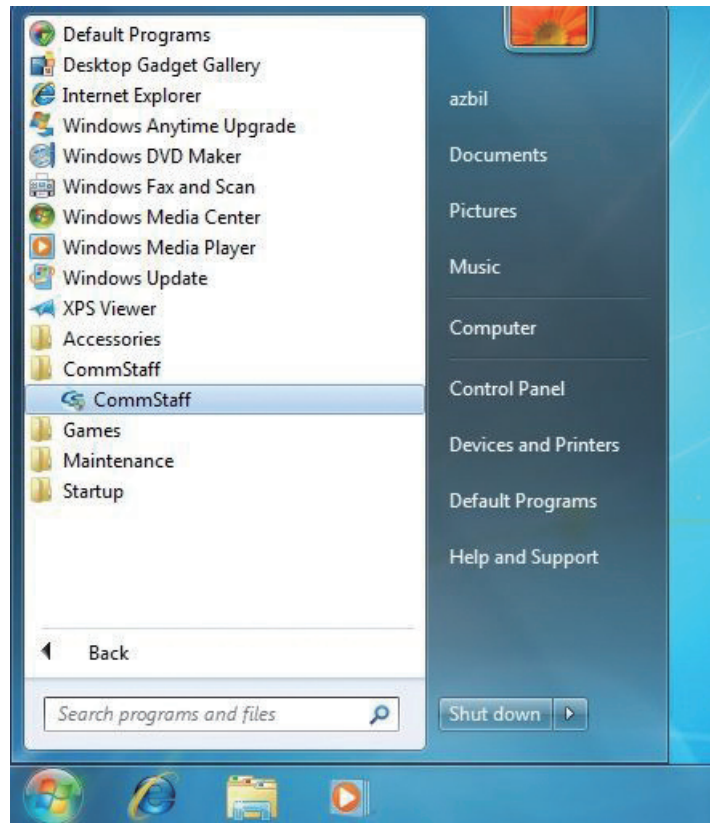




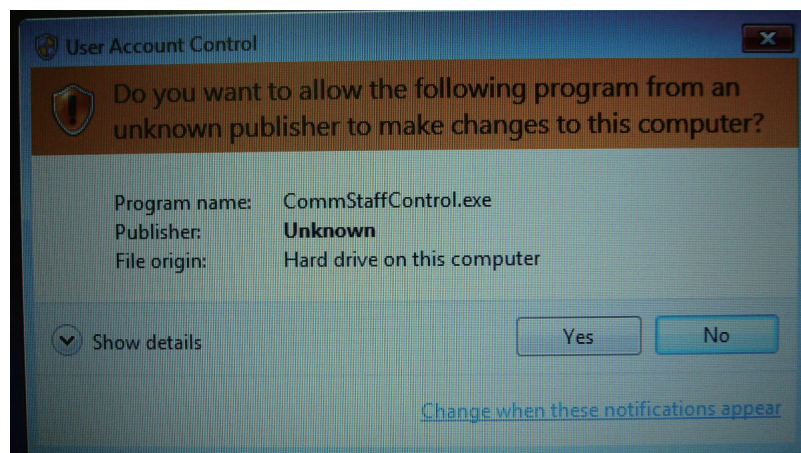
# Chapter 4. Starting and Exiting the Application and Starting Communication

## 4-1. Starting the Program

1. Select Start → All Programs → CommStaff → CommStaff to start the application.



2. The User Account Control screen appears. Click [Yes].



## 4-2. Starting Communication

When CommStaff starts, the following screen appears.

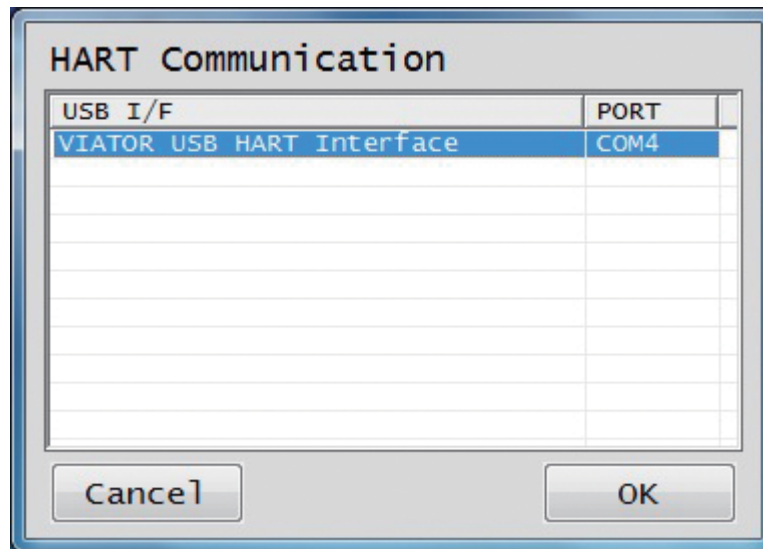


### 4-2-1. HART Communication

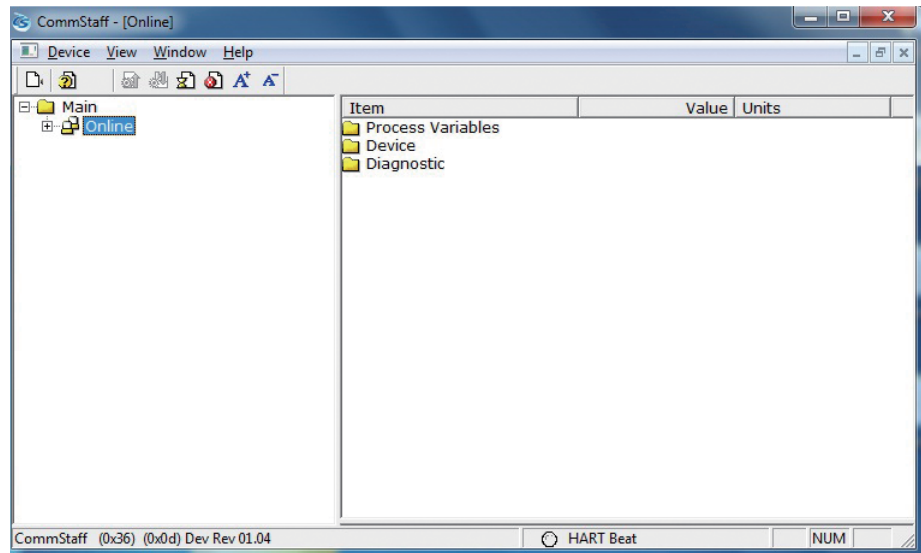
To start HART communication, click [HART Communication].

The HART-related COM ports that are currently connected are listed on the screen. Select the desired COM port and click [OK].

This COM port number is assigned automatically to the CommStaff serial port number setting.



CommStaff screen appears and information about the connected device is displayed.



If communication fails due to some problem, such as no device being connected to the communications cable, the message “ERROR: Failed to acquire a device identity.” appears on the status bar on the bottom left of the window.

Check the device connection.

For more information on the device in question, refer to the instruction manual of the device.

\* **When changing connected devices**

CommStaff continues communicating with the device while it is operating. A communication error will occur if you remove the communications cable from the device in order to change to another device.

First, exit CommStaff and then remove the communications cable from the device. Start CommStaff again after you have connected the communications cable to the new device.

The following message appears if you remove the communications cable while CommStaff is operating.

“Error In Communication with Device, Closing the Device...”

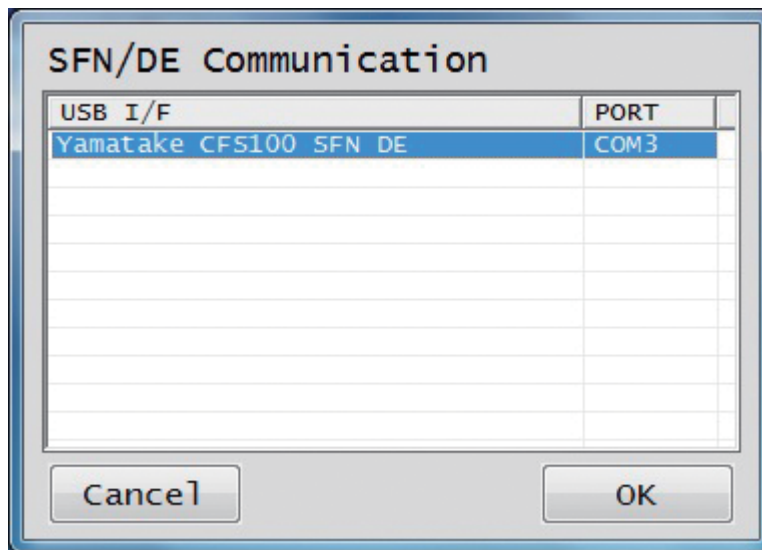
When [OK] is clicked, all displayed data disappears.

## 4-2-2. SFN/DE Communication

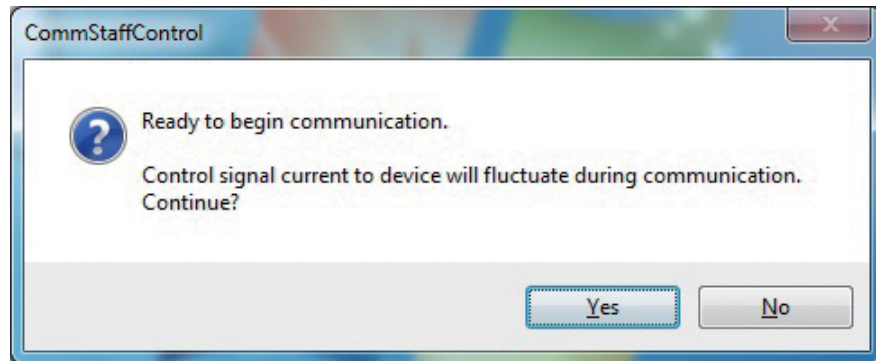
To start SFN/DE communication, click [SFN/DE Communication].



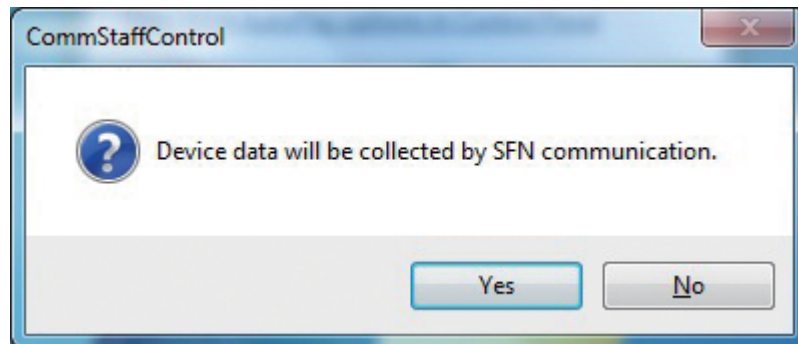
The SFN/DE-related COM ports that are currently connected are listed on the screen. Select the desired COM port and click [OK].



When using SFN/DE communication, the output current from devices that output current fluctuates. The following message appears asking you to confirm that you are aware of this fact. Click [Yes] to continue.



A message appears that asks you to confirm that data should be collected from the SFN device. Click [Yes] to continue.



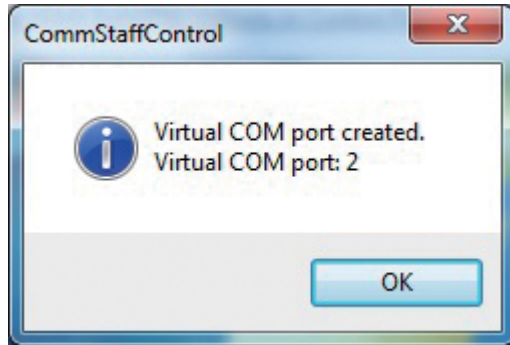
If communication fails due to some problem, such as no device being connected to the communications cable, the message "Procedure terminated because there was no response." appears on the CommStaffControl screen.

Check the device connection.

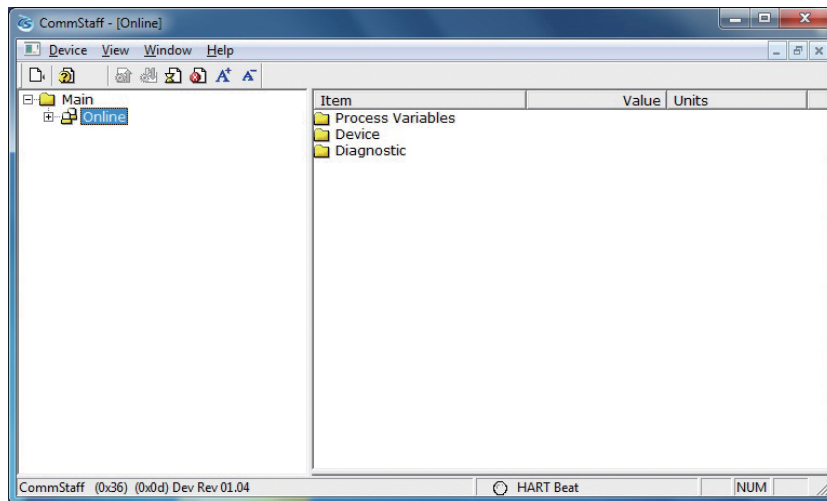


When using SFN/DE communication, CommStaffControl converts between the SFN/DE communication and HART communication protocols using a virtual communication port for relaying communication. The following message confirms that the virtual communication port has been created and displays the port number. Click [OK] to continue.

This COM port number is assigned automatically to the CommStaff serial port number setting.



CommStaff starts and information about the connected device is displayed.



For more information on the device in question, refer to the DD (Device Description) of the device.

#### \* When changing connected devices

CommStaff continues communicating with the device while it is operating. A communication error will occur if you remove the communications cable from the device in order to change to another device.

First, exit CommStaff and then remove the communications cable from the device. Start CommStaff again after you have connected the communications cable to the new device.

The following message appears if you remove the communications cable while CommStaff is operating.

“Error In Communication with Device, Closing the Device...”

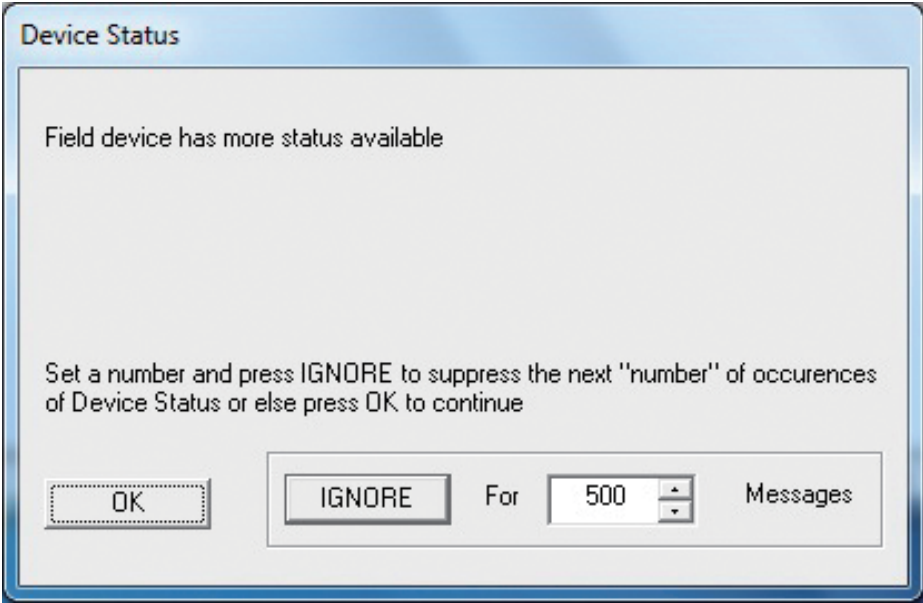
When [OK] is clicked, all displayed data disappears.

### 4-3. Exiting the Application

When your work is complete, exit the CommStaff application first and then exit the CommStaff Control program.

#### 4-4. When the device status is ON

When the device is ON, the following screen is displayed. Click the [Ignore] button. Next, check the device status details as necessary.—For details see section 6.1.2, “View Menu.”



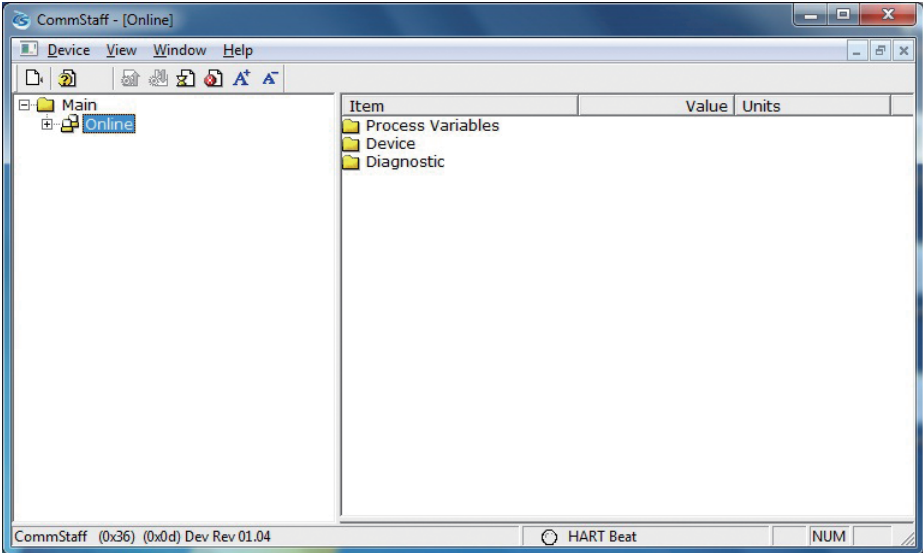


# Chapter 5. Basic Operation of CommStaff

This chapter describes the basic operation of CommStaff.

CommStaff uses an Explorer-type screen configuration. A menu tree appears in the left pane and details of the item selected in the menu tree appear in the right pane.

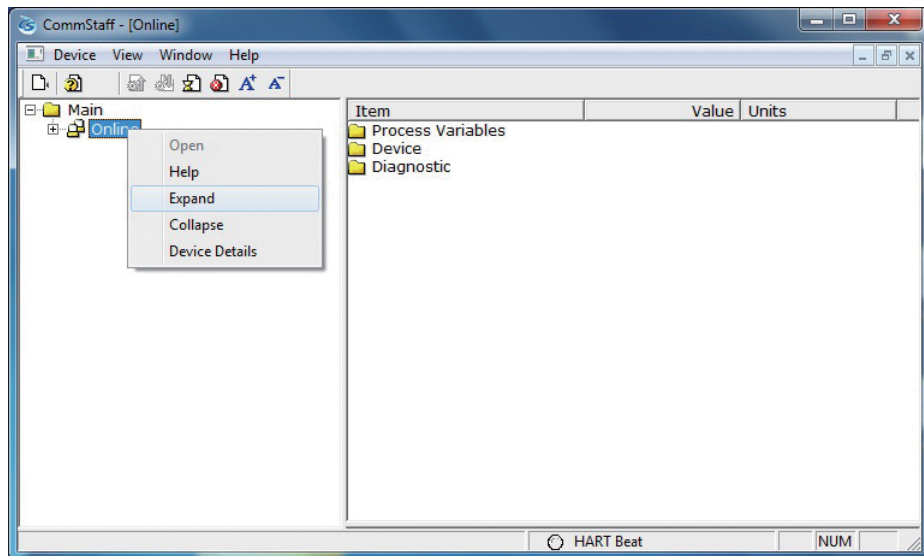
CommStaff has four menus (Device, View, Window, and Help) and eight icon functions.



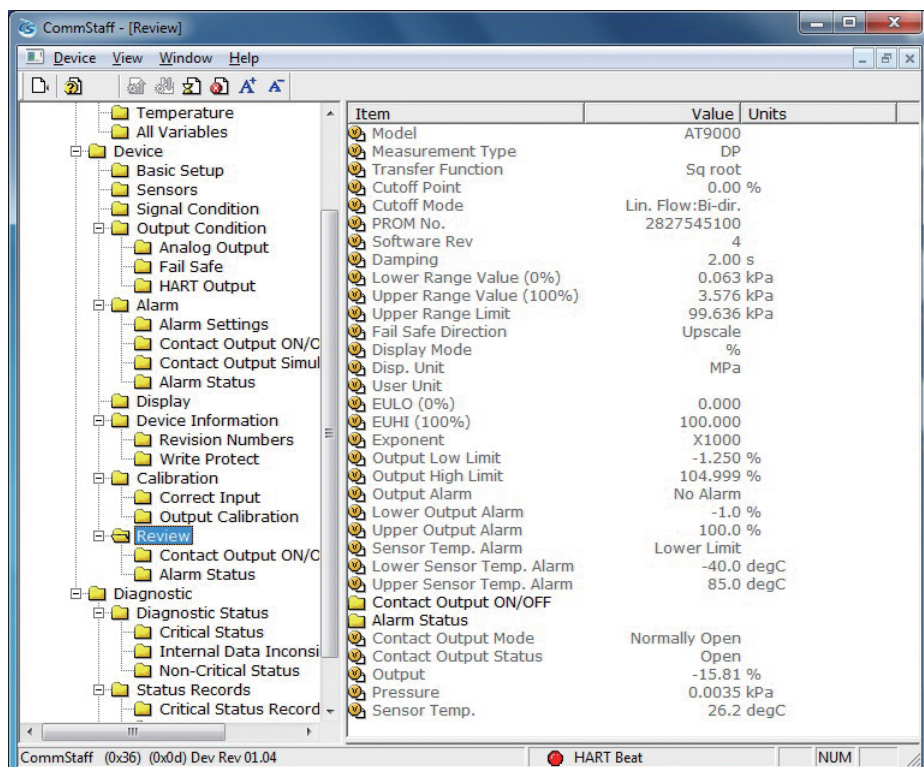
## 5-1. Displaying a List of Main Data Items

To display a list of main data items, select Review in the menu tree.

First, right-click Online in the left pane and select “Expand.” The expanded menu tree is displayed in the left pane.



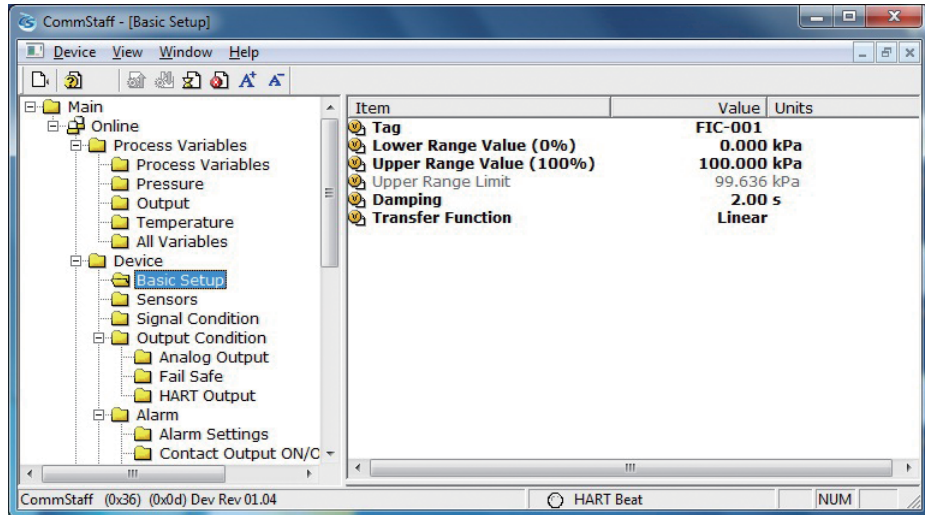
Select Review from the expanded menu tree. A list of main data items appears in the right pane.



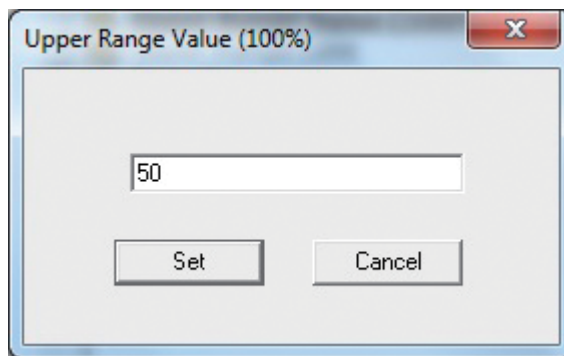
## 5-2. Changing Settings

To change data item settings, double-click the item in the right pane. Note, however, that only the settings of boldfaced data items can be changed. The settings of grayed-out data items cannot be changed. Also note that data settings cannot be changed in the Review pane.

For example, the basic data items for the AT9000 (GTX) device are contained in Basic Setup.

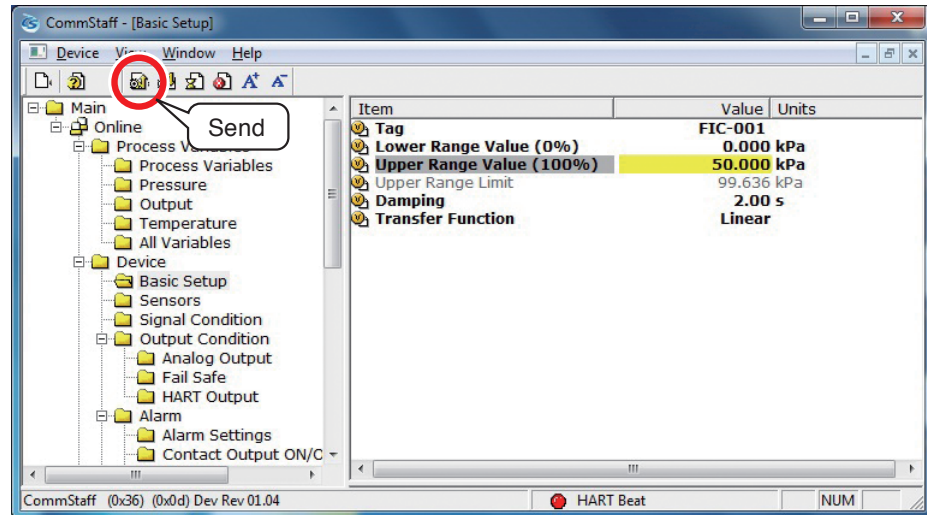


To change the setting for Upper Range Value (100%), double-click that item in the right pane as shown above. A dialog box enabling you to enter the new setting appears. Enter the desired value and click the Config. button.



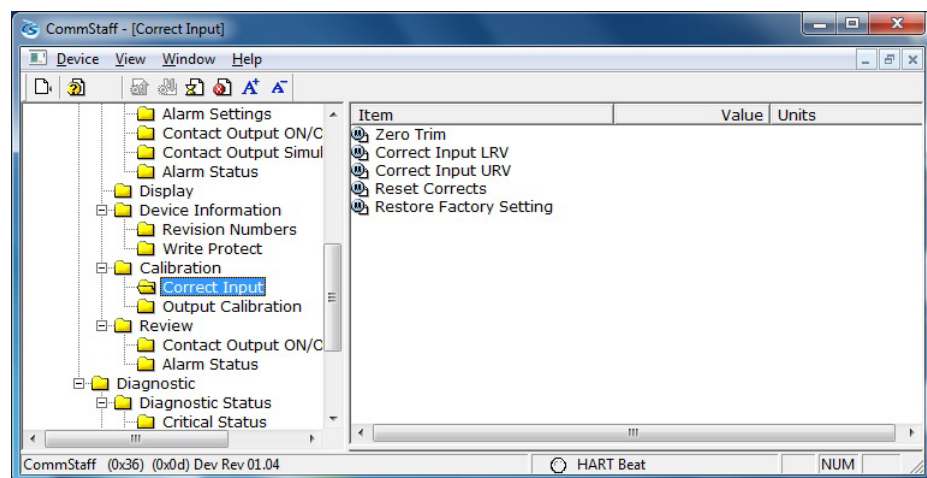
The changed value is highlighted in yellow. The value has not yet been applied in the connected device. To send the changed value to the device, click the send button. The send button has an icon containing an upward arrow and is third from the left in the icon menu.

When the changed value is sent to the device, the yellow highlighting disappears.



### 5-3. Adjustment, Calibration, and Loop Tests

Adjustment, calibration, and loop tests require method calls. For more information, refer to the instruction manual of the device in question.



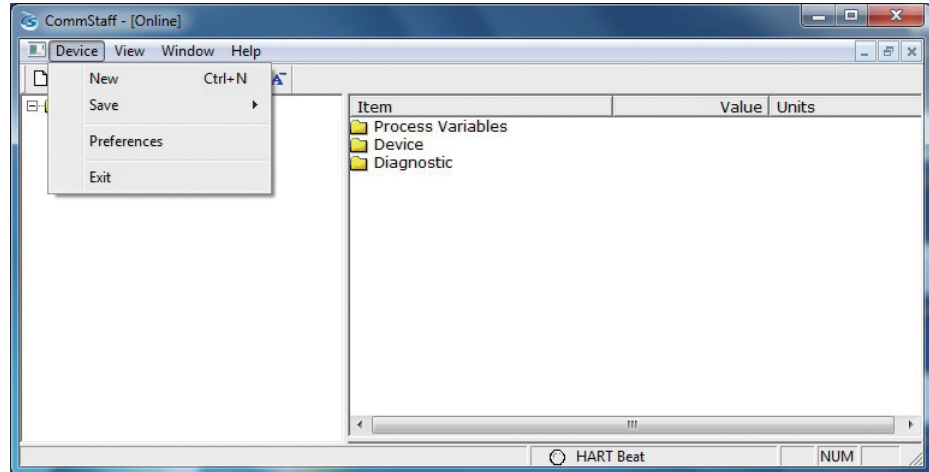
# Chapter 6. CommStaff Functions

This chapter describes the menu functions and the icon menu functions in CommStaff.

## 6-1. Description of Menu Functions

CommStaff has four menus: Device, View, Window, and Help.

### 6-1-1. The Device Menu



The Device menu contains the following items.

New	This function is not used in normal operation. It resends data that disappeared from the screen due to a communication error or other reason. (When changing connected devices, temporarily exit CommStaff and then restart it.)
Save	Saves device data to a file. The data can be saved in CSV or PDF format. For more information, refer to Section 6-1-1-1, "Save Function."
Config.	Configures communication settings. This function is not used in normal operation. For more information, refer to Section 6-1-1-2, "Config."
Exit	Exits CommStaff.

### 6-1-1-1. Save Function

This function saves device data to a file. Either of the following two file formats can be selected:

CSV format, PDF format

The default file names are as follows. The file name can be changed when saving.

CSV format: tag name\_yyyymmddhhmmss.csv

PDF format: tag name\_yyyymmddhhmmss.pdf

Example: FIC-001\_20100804152348.csv

CSV stands for comma-separated values because in the CSV format, data is saved as plain text separated by commas. CSV files can be opened using spreadsheet software such as Excel. They can also be opened using a text editor such as Microsoft Notepad.

Example: PV LRV, 0.00, kPa  
PV URV, 1 00.00, kPa

To open PDF files, software for reading PDF files is required.

*Note: For smart positioners, the default file name for saving will not be the tag name but rather tag\_number\_yyyymmddhhmmss.\*\*\* (where \*\*\* is the file extension). To save with the tag name, input the tag name and save the file.*

## 6-1-1-2. Config.

This function is not used in normal operation.

“Serial Port” is configured automatically when a communication interface is selected. Do not change this setting.

“Search by Poll Address” is used when the device is connected in a HART multidrop topology.

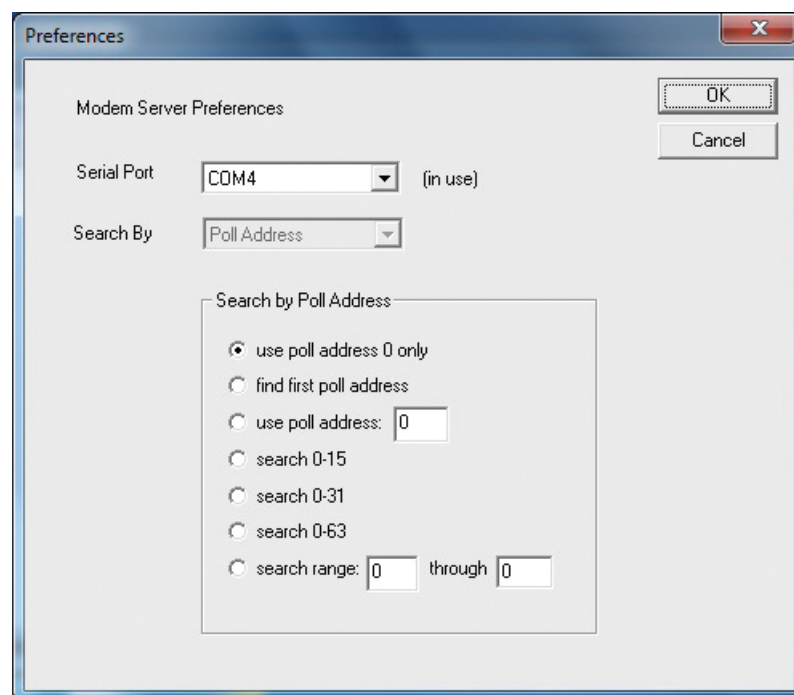
Multidrop topology is the HART communication specification that allows multiple devices to be connected to a single current loop.

In this case, only the device with the polling address “0” outputs 4-20 mA analog current.

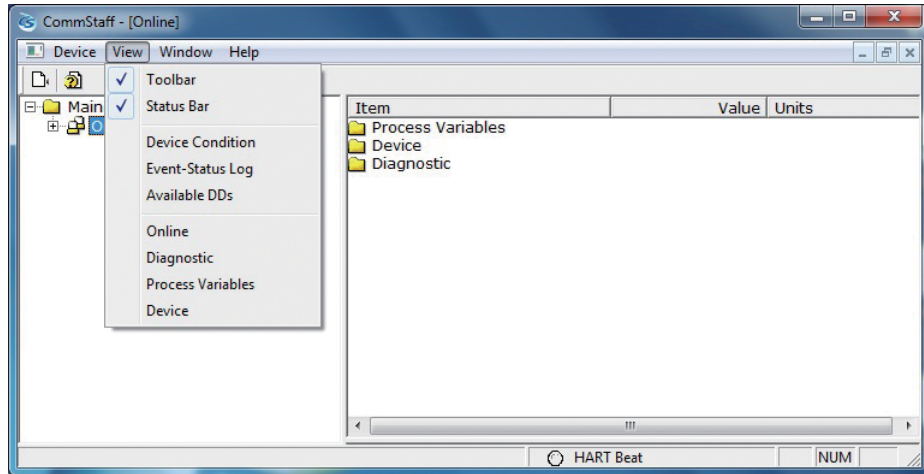
Devices with polling addresses other than 0 output a fixed current (usually 4 mA).

When not using the multidrop topology, be sure to select “use poll address 0 only.”

The search time increases as the number of search addresses increases.



## 6-1-2. View Menu











The View menu contains the following items.

Toolbar	Toggles display of the icon menu. Refer to Section 6-1-2-1, "Icon Menu."
Status Bar	Toggles display of the status bar at the bottom of the screen.
Device Condition	Displays the device status. For more information, refer to the instruction manual of the device in question.
Event-Status Log	Toggles display of the event status log. Refer to the event status log when an incompatibility issue or other similar problem occurs. This function is not used in normal operation.
Available DDs	Displays all available DDs. Refer to Section 6-1-2-2, "All Available DDs."

The items listed below "Online" depend on the contents of the DD of the connected device. Refer to the instruction manual of the device.

### 6-1-2-1. Icon Menu

The icon menu contains the following eight items.

	New	This function is not used in normal operation. It resends data that disappeared from the screen due to a communication error or other reason. (When changing connected devices, temporarily exit CommStaff and then restart it.)
	Version information	Displays information about CommStaff, such as the version.
	Send	Sends data items that have had settings changed to a device.
	Cancel	Cancels changed settings before they are sent, and restores them to the original settings.
	Status	Displays the device status.
	Event status log	Displays the event status log.
	Increase font size	Increases the font size in the menu tree display and the data display panes. This function is useful on PCs with small screens.
	Decrease font size	Decreases the font size in the menu tree display and the data display panes.

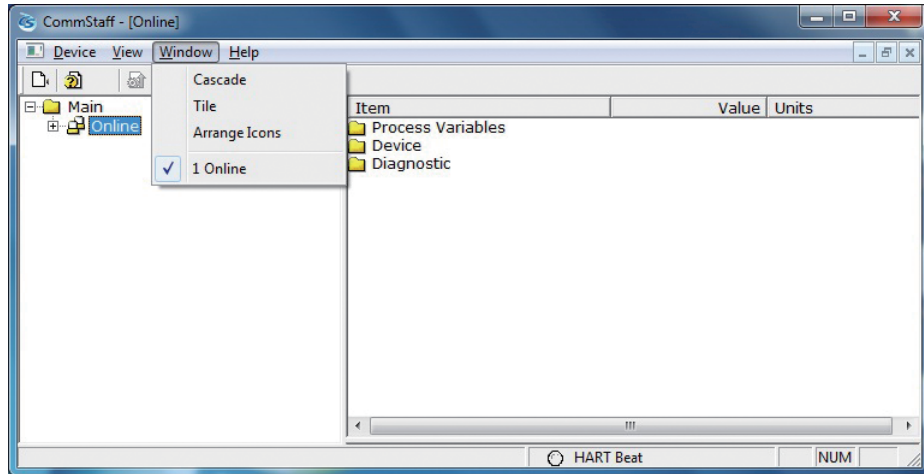
### 6-1-2-2. All Available DDs

DD is an abbreviation for Device Description. It is a file describing the parameters of a HART device.

The vendor code for Yamatake registered by the HART Communication Foundation is 0x36 (in hexadecimal), so the vendor code is displayed as Yamatake (0x36).

0x00, 0x26, and 0xf9 contain default DDs provided by the HART Communication Foundation.

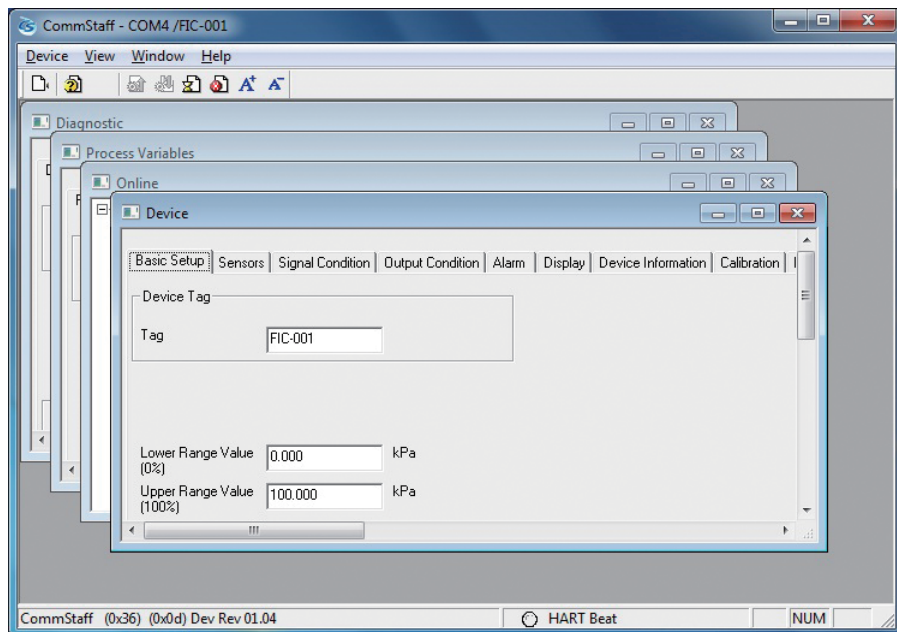
### 6-1-3. Window Menu



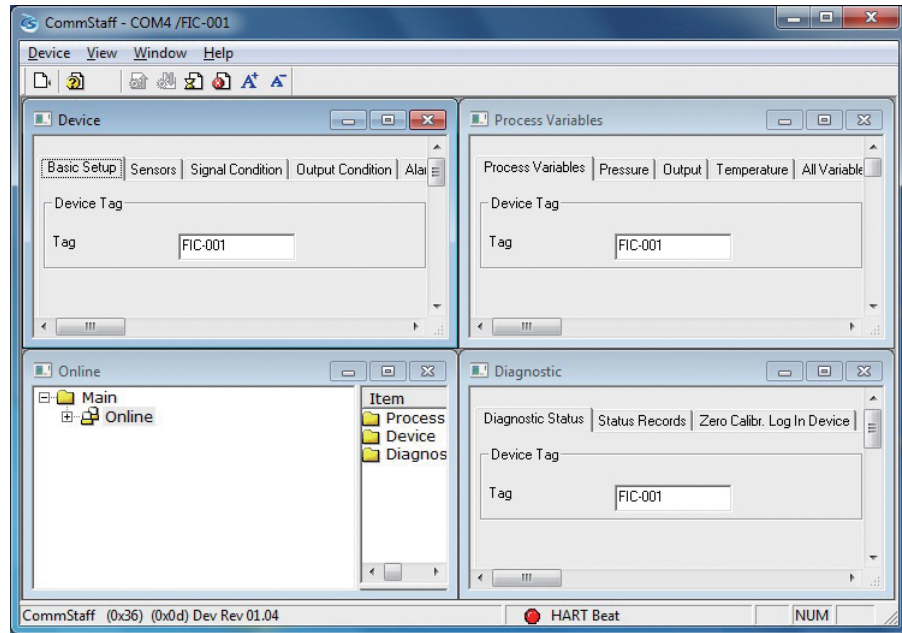
Cascade	Displays multiple open windows in a cascade. An example of cascade display is given in (1) below.
Tile	Displays multiple open windows in a tile arrangement. An example of tiled display is given in (2) below.
Arrange Icons	When windows are minimized, they are arranged as small icons at the bottom of the screen. An example of arranged icons is given in (3) below.

The items listed below “Online” are the currently open windows.

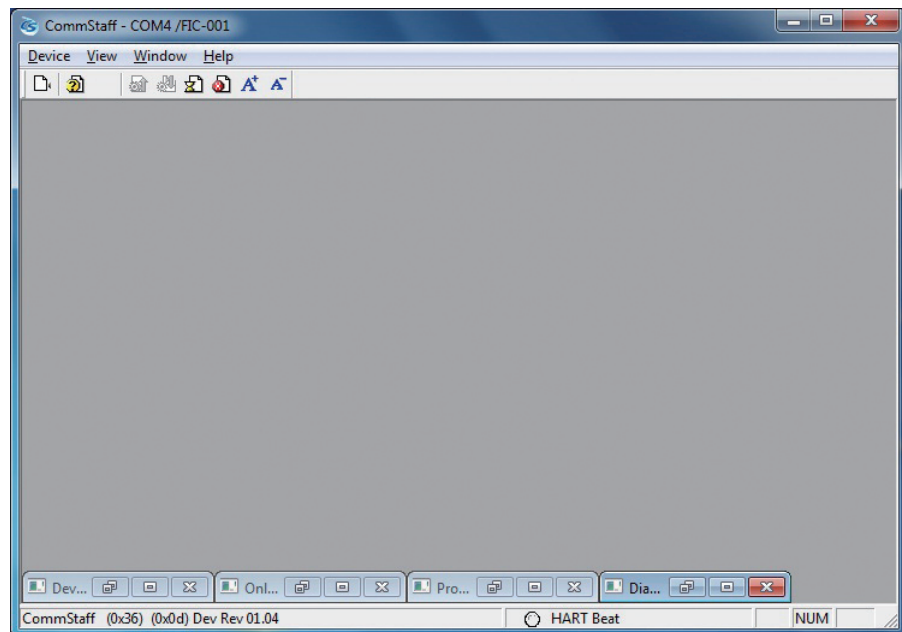
(1) Example of cascade display



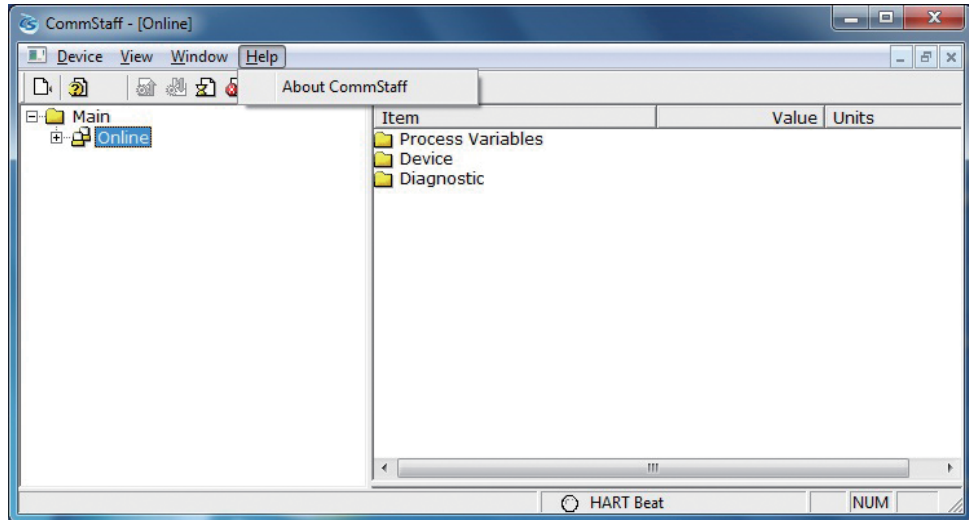
(2) Example of tiled display



(3) Example of arranged icons



## 6-1-4. Help Menu

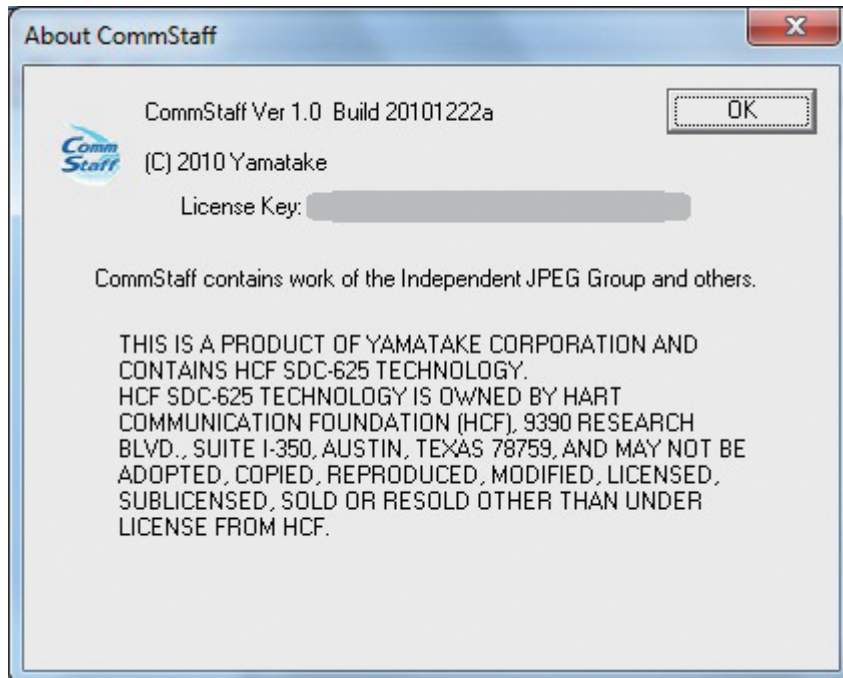


The Help menu contains the following items.

About CommStaff	Displays information about CommStaff, such as the version. Refer to Section 6-1-4-1, “About CommStaff.”
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### 6-1-4-1. About CommStaff

This function displays the CommStaff version, copyright, license key, and other information.



## Chapter 7. Troubleshooting

If you encounter a problem, please review the following “Troubleshooting Checklist” before contacting Yamatake.

### 7-1. Troubleshooting Checklist

1. Is the connected device supported by (compatible with) CommStaff?
2. Does a similar problem occur when another device is connected? If a similar problem does not occur when another device is connected, there may be something wrong with the connected device or the connection loop.
3. Is the communication module connected correctly?
4. Does the PC meet the system requirements recommended by Yamatake?
5. Are other application programs running at the same time? If so, exit the programs and restart CommStaff.
6. If the problem persists after checking the above items, restart the PC and then restart CommStaff.
7. Does the CommStaff application start up? If CommStaff does not start up, there may be a problem with the PC. If programs other than CommStaff do not start either, it is likely that the problem is the PC.

### 7-2. If CommStaff Freezes

If the screen freezes for some reason during operation and you cannot operate CommStaff, restart your PC.

### 7-3. Incompatibility

If a problem occurs due to incompatibility, contact your Yamatake sales representative.

## 7-4. Known issues

We are already aware of the following problems and are working to solve them. Thank you for your understanding.

No.	Description	Countermeasures
1	CommStaff operates as primary master on Windows 7. Therefore it cannot operate as the secondary master of a multi-master. Specifically, while another host and a HART device are communicating continuously with each other, it is not possible to connect CommStaff and communicate with the HART device.	Do not use simultaneously with other HART hosts.
2	The menu can be opened by double-clicking on the left side of the screen, but cannot be opened on the right side.	Open the menu on the left side of the screen.
3	If CommStaff is displayed in full screen mode and then terminated, when it starts the next time, the screen will not be in full screen mode, and a very small screen appears instead.	Instead of using full screen mode, drag the right lower corner of the screen to enlarge it to the desired size.
4	In the SFN communication version, the Analog Output (current value) display of $\pm 200\%$ is shown converted to the 4–20 mA range. This results in display of the erroneous values of $-12\text{ mA}$ and $36\text{ mA}$ for $-200\%$ and $200\%$ respectively.	Treat the Analog Output values (current values) that are converted from $\%$ output values as reference values only.
5	ATT HART communication version: The PV highest and PV lowest values are created when CommStaff starts, and are not updated while CommStaff operates.	To update to the latest values, restart CommStaff.
6	For all types of the SFN communication version: After adjustment or calibration, the message "NOTE-Loop may be returned to automatic control" is sometimes mistakenly shown as the completion message.	In the SFN communication version, the 4–20 mA current signal will be disrupted while CommStaff operates, so manual control must continue. Do not switch to automatic control.

7	<p>"In some SFN communication versions:In the four SFN communication version models listed below, during adjustment function procedures, the latest values are sometimes not shown.</p> <ul style="list-style-type: none"> <li>· ST3000-SFN: Apply values:</li> <li>· AT9000-SFN: Apply values: Zero, Span, LRV (Actual)</li> <li>· PTG-SFN: Apply values:</li> <li>· ALTJ-SFN: Apply values:"</li> </ul>	<p>To retrieve and display the latest values, select and execute "Read new value" from the menu.</p>
8	<p>SFN version: When an SFN communication interface is connected to a PC, it will be recognized as a COM port and will be assigned a number such as COM9. For the CommStaff SFN version, the range of legal numbers is COM1 to COM16, so if the assigned number is COM17 or more, the interface will not function.</p>	<p>If COM17 or a higher a number is issued, change the setting to a value between COM1 and COM16 using the Windows Device Manager.</p>
9	<p>Parameters are shown as blank until they are acquired via communication. Also, during this time double-clicking a parameter will show an initial value which is different from the device value. Moreover, saving files when a blank is displayed will save the initial value, which is not the correct value.</p>	<p>To change a parameter, wait until it is displayed. If the device has a Review menu, wait until the Review menu is completely displayed. Communication speed is slow with SFN communications (218 bps, while HART is 1200 bps), so for some models it takes a few minutes to read all the parameters.</p>
10	<p>When executing Auto setup for AVP or SVX, the screen may indicate that setup is complete even though the device is not actually fully set up.</p>	<p>When the control valve can execute control in response to the input signal, Auto setup is complete, so wait until that time.</p>



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<b>Document Number:</b>	CM2-CFS100-2001
<b>Document Name:</b>	Field Communication Software CommStaff Model: CFS100 (Common Edition) User's Manual

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<b>Date:</b>	Mar. 2012 (rev. 3), Jan. 2011 (initial)
<b>Issued/Edited by:</b>	Yamatake Corporation

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**Yamatake Corporation**