GUIDANT

Fusion4 Portal

Installation & Operation Manual

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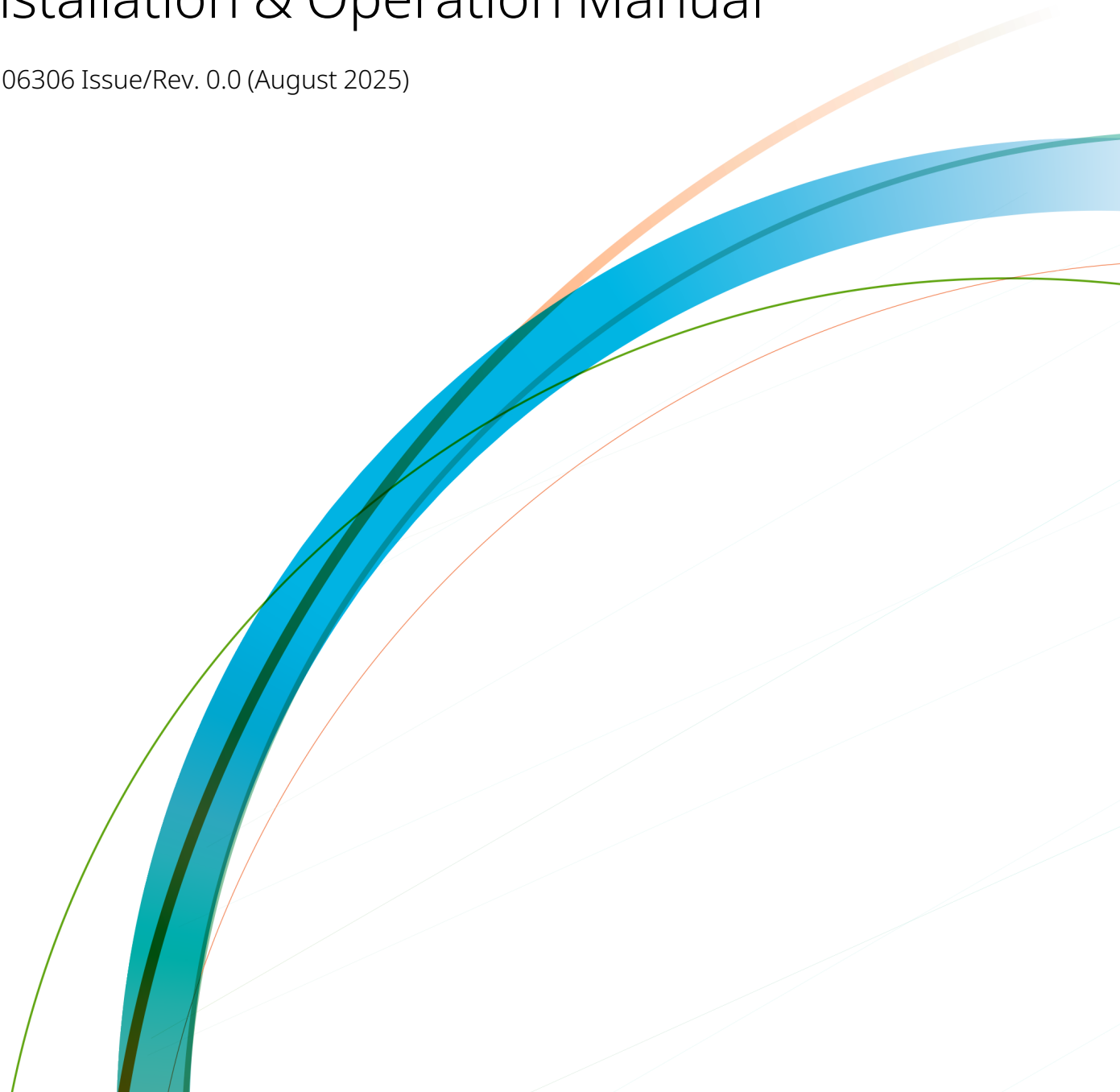

Important

All information and technical specifications in this document have been carefully checked and compiled by the author; however, we cannot completely exclude the possibility of errors. Guidant Measurement is always grateful to be informed of any errors; contact us at TechnicalCommunications@GuidantMeasurement.com.

Caution

The default or operating values used in this document and in the configuration parameters of the product described in this document are for factory testing only and should not be construed as default or operating values for your system. Each system is unique and each configuration parameter must be reviewed and programmed for that specific system application.

Disclaimer

Guidant hereby disclaims all responsibility for damages, including but not included to consequential damages arising out of or related to the inputting of incorrect or improper program or default values entered in connection with the product described in this document.

Technical Support

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Contents

1 General

1.1 Product Introduction

Fusion4 Portal software suite is used for remote monitoring and configuration of hazardous area devices. The Portal suite facilitates remote management by operators and supervisors via Ethernet or Serial communication, for centralized control and the highest standards of reliability.

Available as a modular package, users can bundle together only the functions they require into a common on-screen dashboard.

- The Print module provides all reconciliation printing functions to radically cut the paperwork burden: W&M approved bill of lading printing, transaction printing, scheduled printing, and summary printing, as well as configurable free form data entry supporting localized languages.
- The Monitor module gives a real time audit trail of each and every device transaction for simplified compliance and reconciliation, as well as alarm and a comms monitoring and management panel for rapid identification and pinpointing of faults. The Live Viewer function allows the operator to view any field devices in real-time on screen at the click of a mouse.
- The Configuration module permits remote uploading and downloading of individual or complete device parameter settings from the Portal dashboard to get the operation working quicker.

The application is compliant with the European Directive 2004/22/EC (Measuring Instruments Directive).

Figure 1-1: Fusion4 Portal

1.2 Target Group for This Manual

This manual is intended for:

- Administrators who are assigned to install Fusion4 Portal
- Administrators, engineers, system integrators and supervisors who are assigned to configure and maintain Fusion4 Portal
- Operators who are assigned to operate Fusion4 Portal

1.3 Prerequisites for Fusion4 Portal Installation

- Fusion4 Portal should be installed on a standalone computer.
- If Terminal Manager coexists with Fusion4 Portal,

In TM lookup configuration (LookupTypeCode =WorkflowConfiguration, Name = F4PIntegrated).

If the F4PIntegration is TRUE, then TM does not send the TS (Transaction Settle) command to BCU, whereas if the F4PIntegration is FALSE, then TM sends the TS command to BCU.

2 Safety

2.1 Safety Conventions

2.1.1 Warnings

The following warning formatting used in the manual recommends your attention to prevent personal injuries or dangerous situations.

> WARNING: General warning. It is always explained by text.

2.1.2 Cautions

The following caution formatting and symbols used in the manual recommends your attention to prevent damages to the equipment.

> CAUTION: General caution information.

> CAUTION:  Electrostatic discharge (ESD) sensitive device.

2.2 Liability

Guidant disclaims any responsibility for personal injury or damage to equipment caused by:

- Deviation from any of the prescribed procedures
- Execution of activities that are not prescribed
- Neglect of the safety regulations for handling tools and inflammable fluids, and use of electricity

The contents, descriptions, and specifications in this manual are subject to change without notice. Guidant accepts no responsibility for any errors that may appear in this manual.

> WARNING: Only personnel that are authorized by the customer are allowed to make changes on the Fusion4 Portal system. All modifications must be in accordance to the guidelines as set forth by Guidant.

3 System Description

3.1 General

Fusion4 Portal allows you to:

- Automatically create site by scanning and discovering all the Fusion4 devices connected to the Fusion4 Portal machine.
- Configure Fusion4 devices remotely.
- Scan and print the transaction data of devices (1 up to 50): 1010CB preset controllers, Single Stream Controllers for Blending (SSC-B), Single Stream Controllers for Additive Injection (SSC-A), Multi Stream Controllers for Additive Injection (MSC-A), and Multi Stream Controllers for Loading (MSC-L).
- Remotely view live loading details of Fusion4 devices.
- Remotely view the device health status.
- Provide an interface with an OPC server that scans the 1010CB devices continuously to provide real-time values, alarms, and the current state of the devices.
- Scan Fusion4 devices (SSC-A, SSC-B, MSC-A, and MSC-L) for possible alarms.

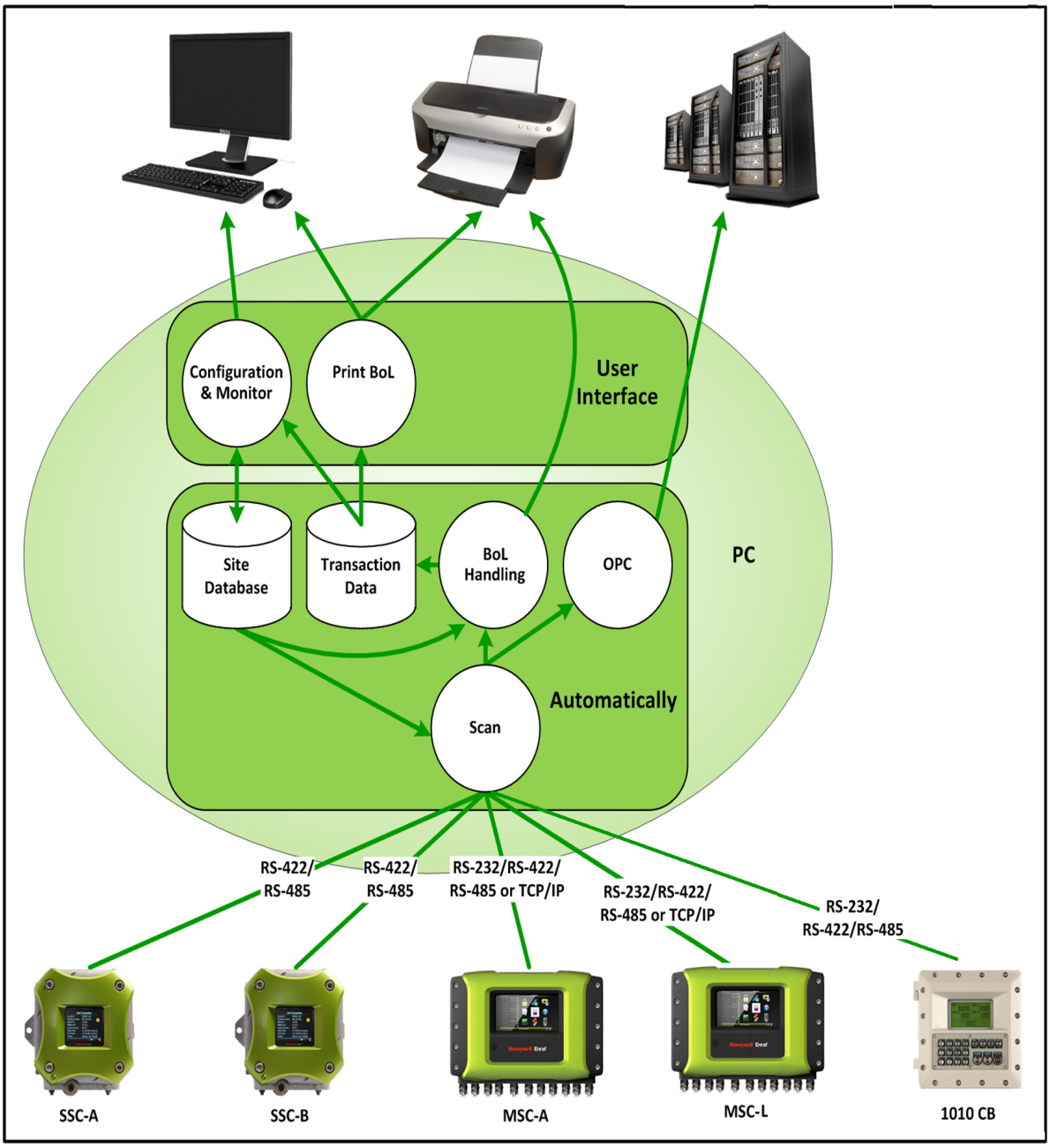
3.2 System Architecture

Fusion4 Portal is a software suite running in the safe area or to be more specific, in the control room. It consists of the following integrated features:

- Scan (see Section 3.2.1: Scan)
- BoL Handling (see Section 3: System Description)
- Print BoL (see Section 3.2.3: Print BoL)
- OPC Server (see Section 3.2.4: OPC Server)

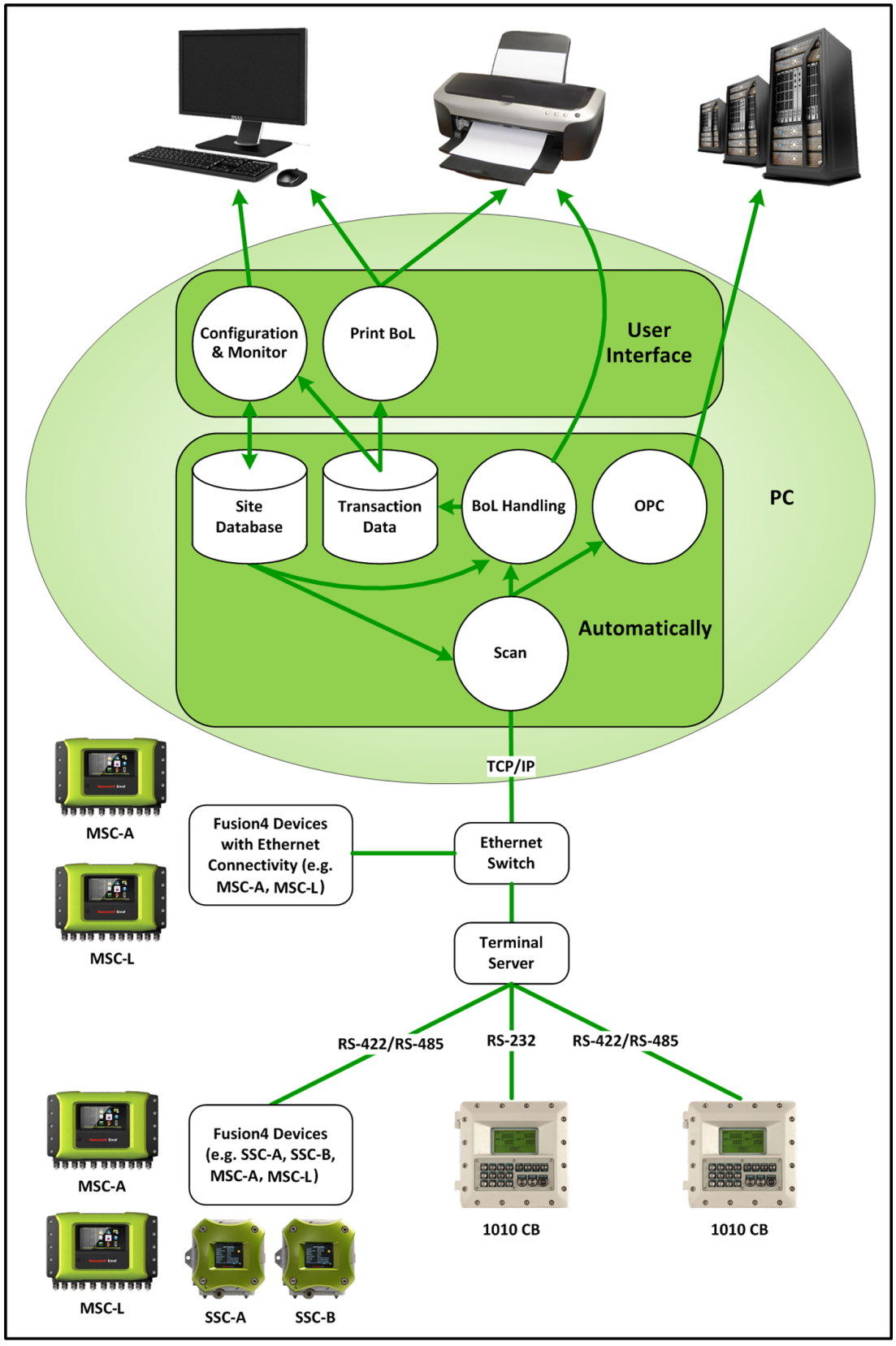
The following figure represents the “Fusion4 Portal functional drawing - Serial connection”.

Figure 3-1: Fusion4 Portal functional drawing - Serial connection



The following figure represents the “Fusion4 Portal functional drawing - Ethernet connection with terminal server”.

Figure 3-2: Fusion4 Portal functional drawing - Ethernet connection with terminal server



3.2.1 Scan

The Scan feature is started automatically when the computer is started. This feature communicates continuously with all connected devices. As soon as a device has new transaction data available, the Scan feature retrieves this data. This fully automatic process takes place in the background out of user's sight. Therefore, no user interaction is required.

The Scan feature communicates via all computer ports concurrently (if more than one port is used). Therefore, Fusion4 Portal is able to respond quickly when new data from a device becomes available.

In addition to retrieving transaction data from the connected devices, the Scan feature also retrieves realtime data during loading, alarms and operational parameters as well.

> NOTES:
>
> 1. Cabling for the 1010CB is described in Card Descriptions and Wiring Manual Load Computer 1010CB.
> 2. Cabling for the SSC-A and the SSC-B is described in the SSC manuals.
> 3. Cabling for the MSC-A is described in the MSC-A manual.
> 4. Cabling for the MSC-L is described in the MSC-L manual.

3.2.2 BoL Handling

The BoL Handling feature is responsible for printing the Bill of Lading (BoL). When transaction data from a connected device is received and the print transaction function of the device is enabled, the data, including the applicable engineering units, is immediately printed resulting in a BoL. This print action starts automatically without human intervention. The BoL is printed for custody transfer when a product from storage tanks has been transferred to other parties. For this reason, all Fusion4 Portal features involved in retrieving the transaction details and printing/reprinting the Bill of Lading are W&M compliant and approved by a notified body.

3.2.3 Print BoL

Transaction data stored on the hard disk can be viewed and printed with the Print BoL feature. This feature enables you to search for a specific transaction or to search for one or more transactions that were completed and stored on a specific date or within a specific period of time. Subsequently, the details of one or more transactions can be viewed and/or printed. In case of an SSC-A and MSC-A, the printout is an additive transaction summary. In case of a 1010CB, SSC-B, or an MSC-L, the printout is a Bill of Lading.

3.2.4 OPC Server

Fusion4 Portal provides an OPC Server feature named Fusion4 that communicates with the 1010CB preset controllers and the Fusion4 devices (SSC-As, SSC-Bs, MSC-As, and MSC-Ls). Fusion4 offers OPC connectivity with OPC clients to read, subscribe and write values to the 1010CB device to achieve the required workflow at the terminals. An example of an OPC client is a Terminal Automation System (TAS). Fusion4 scans the 1010CB preset controllers continuously to provide real time values and the current state of the devices.

3.3 System Requirements

To install Fusion4 Portal, the following hardware components and software are required.

3.3.1 Minimum Hardware Requirements

The following table describes the minimum hardware requirements for installing Fusion4 Portal.

Table 3-1: Minimum Hardware Requirements

Hardware	Description
Processor	Intel® Xeon® Quad Core 32/64 bit
Memory	4 GB RAM
Free space	1000 GB hard disk, 7200 RPM

Hardware	Description
Reader	CD-ROM / DVD drive with 40 speed
Video card (Graphics card)	Resolution 1080 x 800 resolution, 32-bit true color
Keyboard	Standard US keyboard
Mouse	USB mouse or bus mouse
Serial port	One or two (recommended) RS-232 ports + RS-485 ports
USB port	Three USB ports to support USB mouse, keyboard and printer
Network interface card	10 or 100 Mbps integrated Ethernet Net- work Interface card
Printer	The printer should have detection for: • Out-of-paper • Limited available ink • Communication failure between PC and printer The printer should support A4 or letter. Color print out is not required.

3.3.2 Software Requirements

The following table describes the software requirements for installing Fusion4 Portal.

Table 3-2: Software Requirements

Software	Description
Operating system	Windows 10 Professional Edition in English (US) language 64-bit version

3.4 Graphical User Interface

In general, all the user interface screens in the Fusion4 Portal application have a similar look and feel based on a Windows Explorer type of user interface.

Figure 3-3: Fusion4 Portal window layout

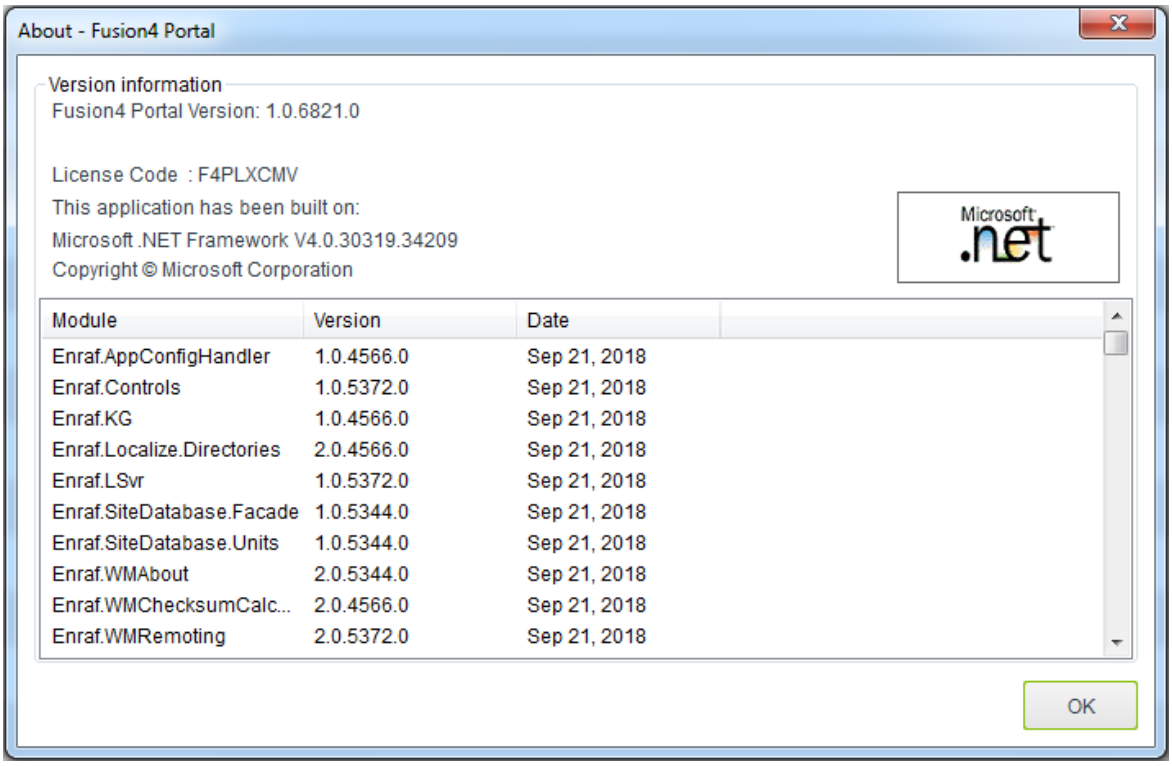
1. Application Menu, see section 3.4.1
2. Section Menu, see section 3.4.2
3. Site tree panel, see section 3.4.3
4. Alarm panel, see section 3.4.4
5. Work panel, see section 3.4.5

3.4.1 Application Menu

The header displays the name of the application and also contains menu options namely File, Edit, Reports, Print, and Help.

3.4.1.1 About

When you select About... from the Help menu, the About window is displayed. This window provides information about the versions of the Fusion4 Portal s.



Furthermore, the About window provides information about the available Fusion4 Portal license options.

The possible license options are described in the table below.

Table 3-3: Description of license options

License Option	Description
Number of field devices	The value is based on the number of field devices in the site. • S: Up to 10 devices. • L: Up to 50 devices.
Print license	The Print license is based on the following: • U: Transaction & BoL Printing • X: EU MID Compliant Transaction & BoL Printing • N: No transaction retrieval and no printing

License Option	Description
Configuration license	The Configuration license is based on the following: • C: Remote configuration of Fusion4 devices. • N: No remote configuration of Fusion4 devices.
Monitor license	The Monitor license is based on the following: • M: Monitors the Fusion4 device alarms, updates the device health status in the site tree view, and displays the live loading details of the Fusion4 devices. • N: Fusion4 device alarms and live loading screen are not available.
OPC license	The OPC Interfacing license is based on the following: • V: Multi-client OPC server • N: No external OPC client

NOTE: The Auto Discover and Diagnostics features are available as part of the basic Fusion4 Portal license.

3.4.2 Section Menu

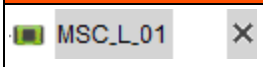
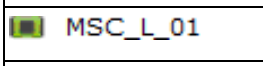
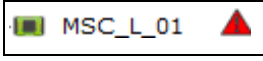
The various menu buttons are Transactions, Diagnostics, Configuration, and Logs.

3.4.3 Site Tree Panel

The site tree panel shows a tree containing the contents of the site. It shows all the elements configured with Fusion4 Portal, and is used to navigate through the elements. Examples of elements are: COM ports, IP ports, loading bays and devices.

The communication status of each device is displayed in the site tree, in the Fusion4 Portal application.

Table 3-4: Device Communication Statuses

Device Icon Color	Description
	Device is not enabled for scanning - Initial state
	Device communication is healthy
	Device communication error

NOTE: The site tree panel is available in the Fusion4 Portal application and the Print BoL application. The site tree panel is not available in the Enraf Process Control Centre (EPCC) application and the License Manager application.

3.4.4 Alarm Panel

The Alarm panel displays a list of active alarms in chronological order with the newest alarms on top of the list. For more details, see Section 10.3: Monitoring Alarms.

3.4.5 Work Panel

The work panel displays the data of the node selected in the site tree panel depending on the option selected in the Section menu.

NOTES:

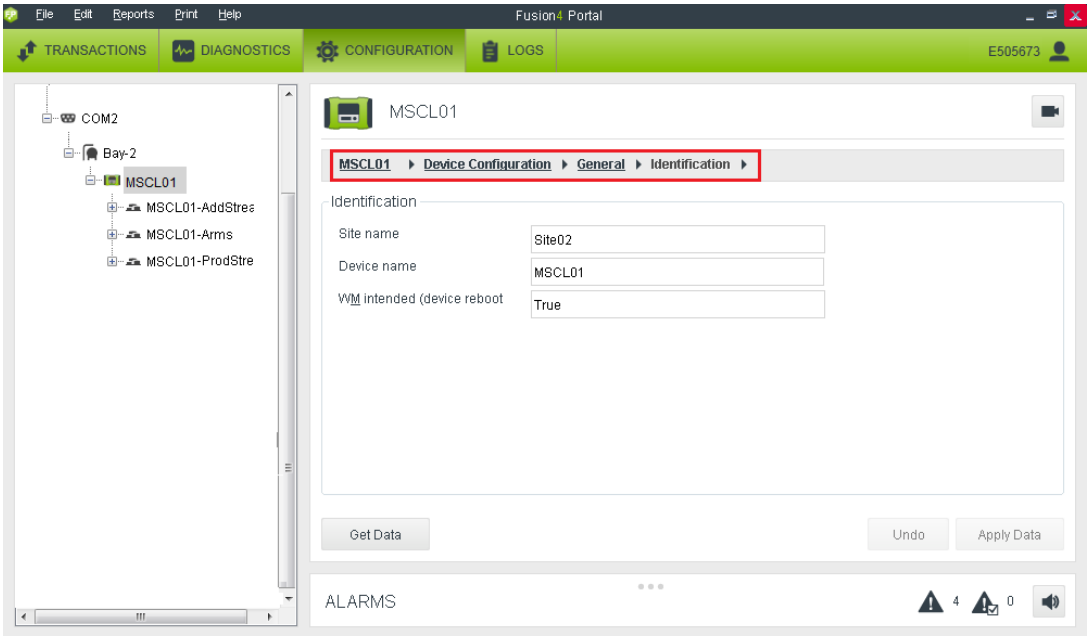
1. The Transactions panel displays the site-level, port-level, and/or device-level transactions.
2. The Diagnostics panel displays the details of dashboard and system health for the selected device.
3. The Configuration panel displays the various configuration options for the selected device.
4. The Logs panel does not display the data of the node selected in the site panel, but displays the events logged by the Fusion4 Portal applications. By default, the most recent logged event is displayed on top of the list, and the list is automatically updated.

Any or all of the following menu items are available as part of the Fusion4 Portal pages.

Buttons/Fields	Functionality
Apply Data	Allows you to apply the settings.
Get Data	Allows you to get the current values from the device.
Last read time	Allows you to view the time when the current values from the device were last read.
Undo	Cancel the applied settings.
Live Viewer 	Remotely monitor the current loading details of the device.

The work panel also displays the selected options in breadcrumbs as shown in the following figure.

For example: MSCL01 > Device Configuration > General > Identification



You can click the required links in the breadcrumbs to go to the corresponding group.

4 Migration from Fusion4 Portal R221.1 to R222.3

> CAUTION: The migration of Fusion4 Portal must be carried out by a user with administrator privileges.

This chapter is intended for users migrating from Fusion4 Portal R220.1 installed on Windows 7 32-bit OS to Fusion4 Portal R221.1 on Windows 10 64-bit Operation system.

> NOTE: For versions prior to Fusion4 Portal R220.1, first upgrade to R221.1 and then migrate to R222.3. Refer to the Fusion4 Portal R221.1 Installation & Operation Manual for more information. When you migrate from R221.1 to R222.3, the seal is broken.

4.1 Pre-Installation

Before installing Fusion4 Portal R222.3 on Windows 10 machine, create a backup of the '...\ProgramData\Enraf' folder and its contents from the existing Fusion4 Portal R220.1 machine.

4.2 Installation

1. Obtain a Fusion4 Portal License for the Windows 10 machine
2. Install Fusion4 Portal R221.1 application

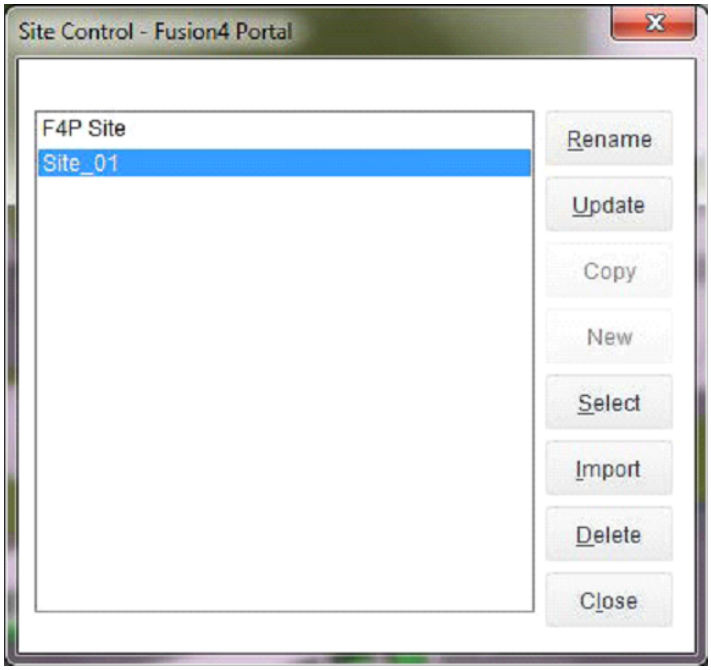
Refer to Section 5.2: Preparing to Install Fusion4 Portal and Section 5.3: Installing Fusion4 Portal for more information.

4.3 Post-Installation

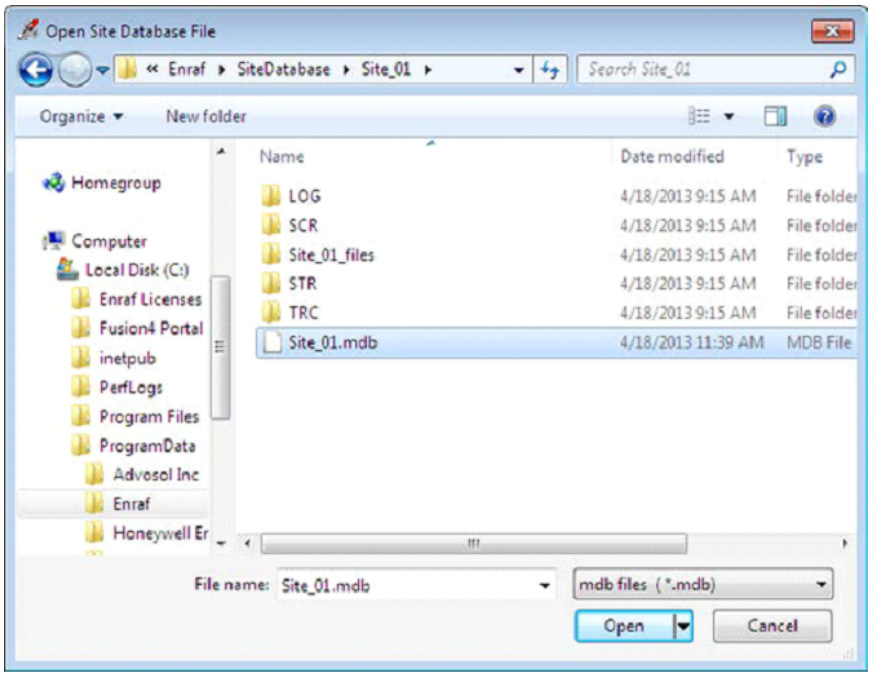
After installing Fusion4 Portal R222.3, you should perform the below steps to migrate Fusion4 Portal R221.1 to Fusion4 Portal R222.3.

1. If the Enraf BoL Printer through Enraf Process Control Centre (EPCC) is running, stop it.
2. Copy contents from the backup taken as per section 4.1 to any desired location on destination machine (ex: c:\temp)
3. Import a Site Database. Perform the following steps to import the configuration data

   From the File menu, select Import. The Site Control window is displayed.



   Click Import. The Open Site Database File window is displayed.



Browse to the backup directory containing the site database file (.mdb file).

Select the site database file and then click Open.

The site database is imported.

4. Import transaction data

   Copy all the contents from the 'Fusion4Portal' folder in the backup directory to '...\ProgramData\Enraf\Fusion4Portal' folder

5. Restart the computer.
6. Start the Fusion4 Portal R222.3 application.
7. Ensure that the site settings are restored appropriately.
8. Perform a transaction and check if the transactions are displayed in the Transactions panel in the Fusion4 Portal and Print BoL applications.

   You can also view the transactions of Fusion4 Portal R222.1 by using the appropriate search criteria in the Transactions panel in the Fusion4 Portal and Print BoL applications.

9. Ensure that the Fusion4 Portal is sealed.

5 Installation

> CAUTION: The installation of Fusion4 Portal must be carried out by a user with administrator privileges.

5.1 Prerequisites

Ensure that the following prerequisites are met before you begin the Fusion4 Portal installation.

- Devices are configured with appropriate serial numbers.
- MSC-A/MSC-L devices have a valid license (not a developer license).
- Transactions having serial number with "*" or having no serial numbers are manually settled or cleared. Refer Section 13.4: Troubleshooting.
- Devices have appropriate firmware versions. Refer Section 13.4: Troubleshooting.

5.2 Preparing to Install Fusion4 Portal

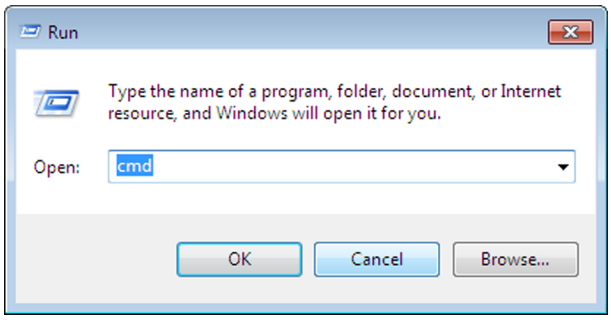
5.2.1 Obtaining a Fusion4 Portal License

Before installing Fusion4 Portal, you must obtain the Fusion4 Portal license from Guidant Support.

To obtain the Fusion4 Portal license from Guidant, perform the following steps:

1. From the Start menu select Run....

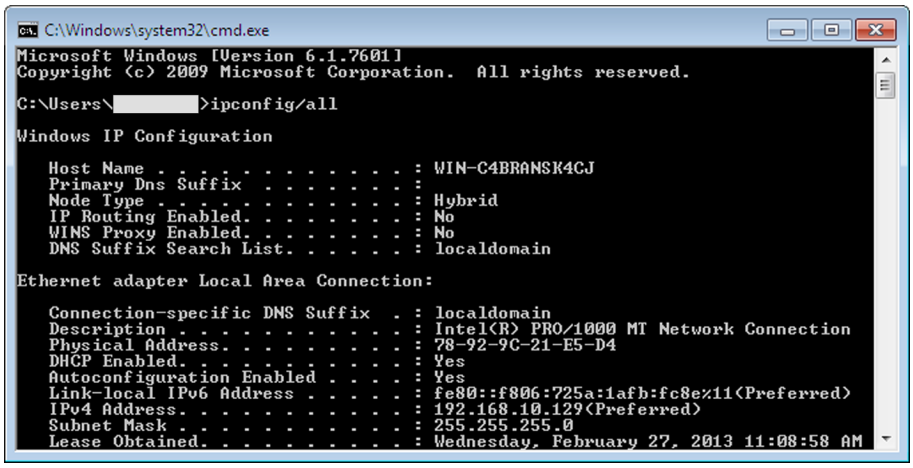
   The Run dialog box is displayed.



> NOTE: If Run... is not displayed in the Start menu: (1) Right-click on the Start menu icon and select Properties from the pop-up menu; (2) On the Start Menu tab in the Taskbar and Start Menu Properties window click Customize...; (3) In the Customize Start Menu window, select the Run command check box and click OK to save the changes and to close the window; (4) Click OK to save the changes and to close the Taskbar and Start Menu Properties window.

2. Enter cmd in the Run dialog box and then click OK.
   The MS-DOS Prompt window is displayed.

3. Enter ipconfig/all in the command window and press <ENTER>.
   The Ethernet adapter Local Area Connection details are listed.



4. Note down the Physical Address for the Ethernet adapter for which you want to request a license.

> NOTE: This has to be the physical address of the target computer, i.e. the computer on which Fusion4 Portal will be installed and running.

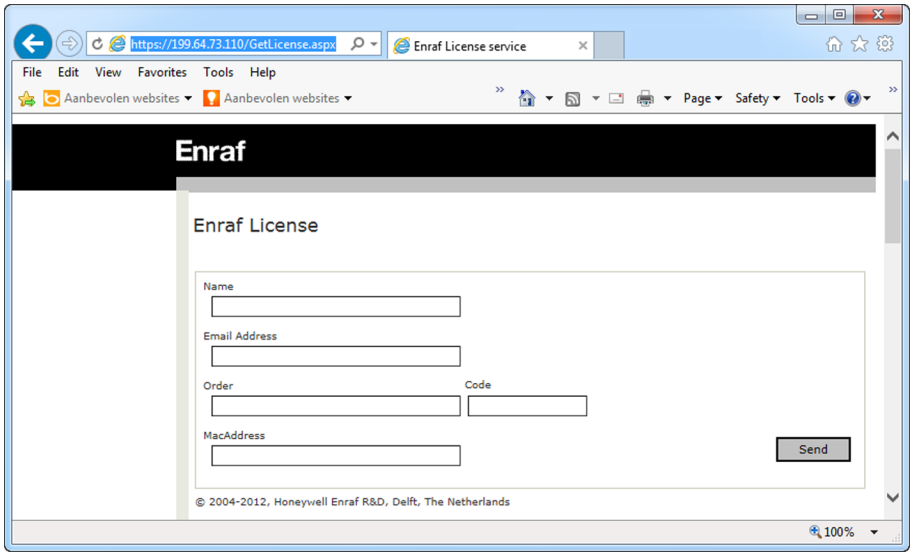
5. Enter exit and press <ENTER>.
   The MS-DOS Prompt window is closed.

   You will receive an e-mail containing the following information:

   - A hyper link to the location to get your license
   - The name of the person who requested the license
   - The e-mail address of the person who requested the license
   - The Order ID
   - A code

6. Click the hyper link stated in the e-mail you received.

   The Enraf License window is displayed.



7. Enter the name, e-mail address, order ID, and code stated in the e-mail you received. Also enter the physical address (MAC address) of the pc on which Fusion4 Portal will be installed and running.

8. Click Send.

You will receive an e-mail with the license (xml file) as an attachment.

9. Save the xml file on your pc.

5.3 Installing Fusion4 Portal

Installation of Fusion4 Portal must be carried out in the following order:

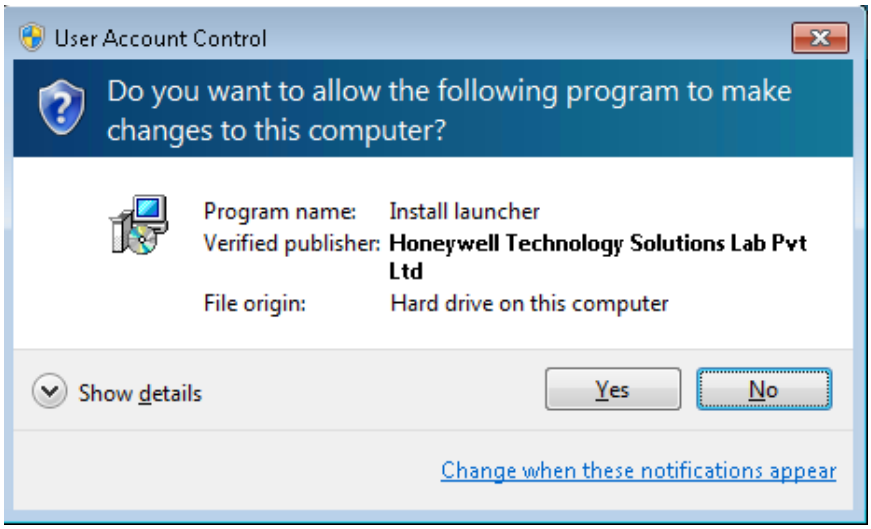
1. Installing Fusion4 Portal, refer to Section 5.3.1: Installing Fusion4 Portal
2. Setting up a Fusion4 Portal license, refer to Section 5.3.2: Setting Up a Fusion4 Portal License
3. Creating user accounts, refer to Section 5.3.3: Creating User Accounts
4. Assigning users accounts to user groups, refer to Section 5.3.4: Assigning Users to a User Group
5. Configuring the default printer, refer to Section 5.3.5: Configuring the Default Printer
6. Restarting the computer, refer to Section 5.3.6: Restarting the Computer

5.3.1 Installing Fusion4 Portal

To install Fusion4 Portal on your computer, perform the following steps:

1. Log on to the computer as Administrator.
2. Insert the CD-ROM into the CD-ROM or DVD drive on your computer.
3. Click Install_Fusion4_Portal_R222.3.

> NOTE: When User Account Control is enabled on the computer, Windows displays the User Account Control window during the installation of Microsoft .NET Framework 4.



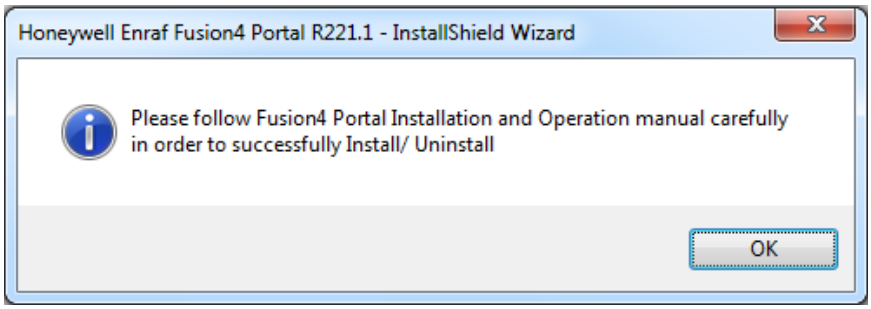
4. Click Yes.

   The Fusion4 Portal R222.3 splash screen is displayed.

> NOTE: If installation of Fusion4 Portal does not start automatically, browse the contents of the CD-ROM and double-click Install_Fusion4_Portal_R222.3 .exe.

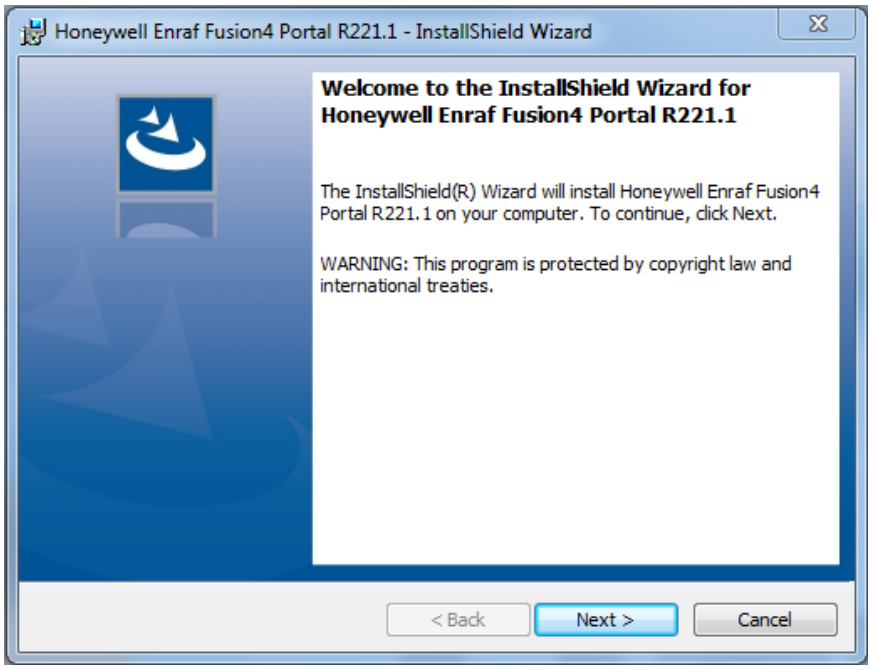
5. Click Install at the top left side of the window.

After some time, the following message is displayed.



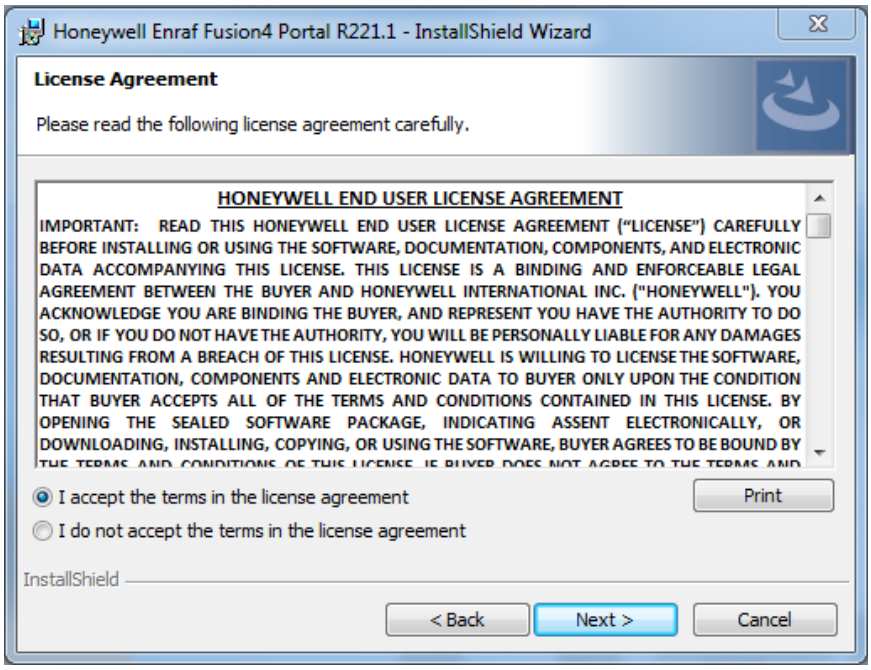
6. Read the message and then click OK.

   The Welcome to the InstallShield Wizard for the Fusion4 Portal R221.1 window is displayed.



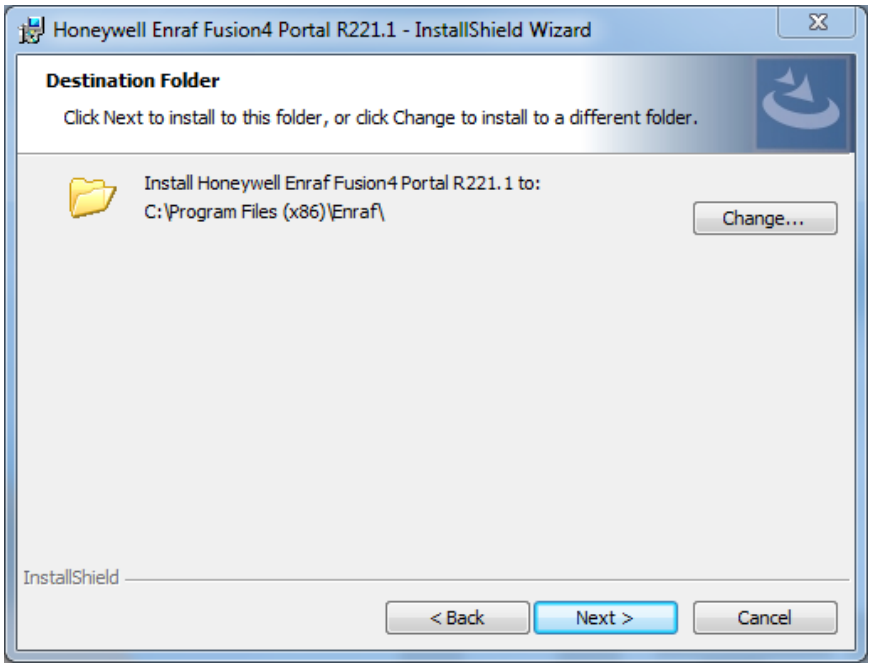
7. Click Next.

   The License Agreement window is displayed.



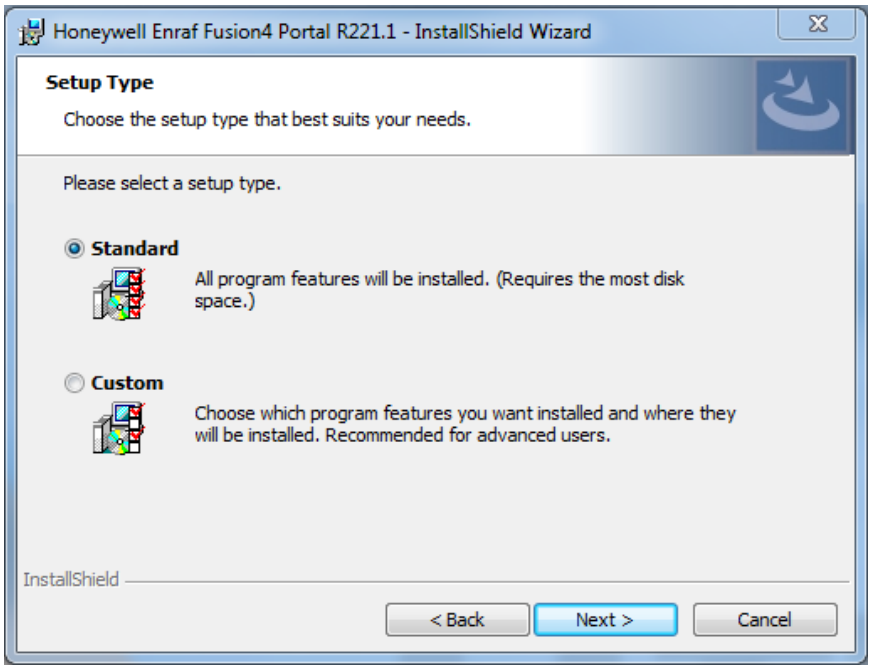
8. Read the license agreement. To print the license agreement, click Print. If agreed upon, select I accept the terms in the license agreement, and then click Next.

   The Destination Folder window is displayed.



9. If necessary, change the directory, and then click Next.

The Setup Type window is displayed.



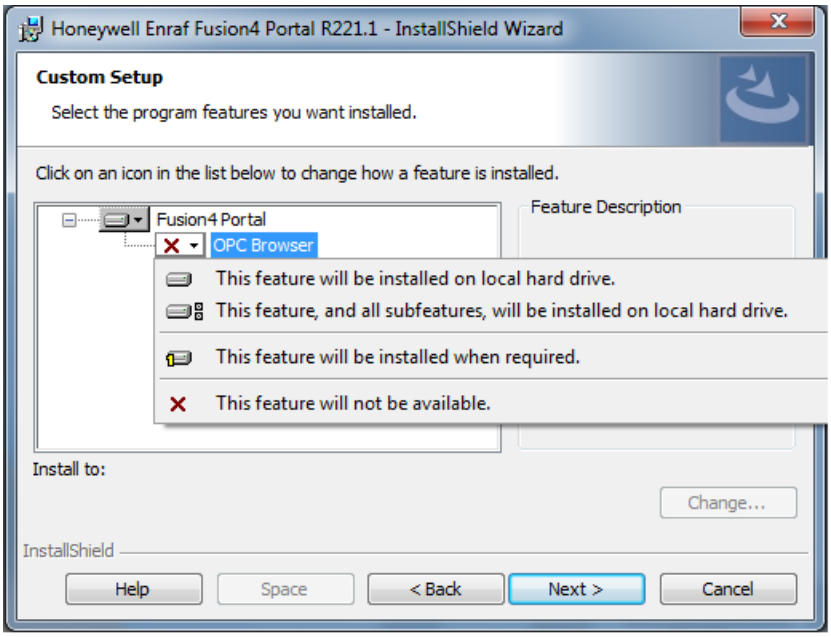
10. Select the setup type and then click Next.

    - Select Standard to install all features of Fusion4 Portal.

      If you selected Standard, the Ready to Install the Program window is displayed. Proceed with step 11.

    - Select Custom to select the features of Fusion4 Portal you want to install.

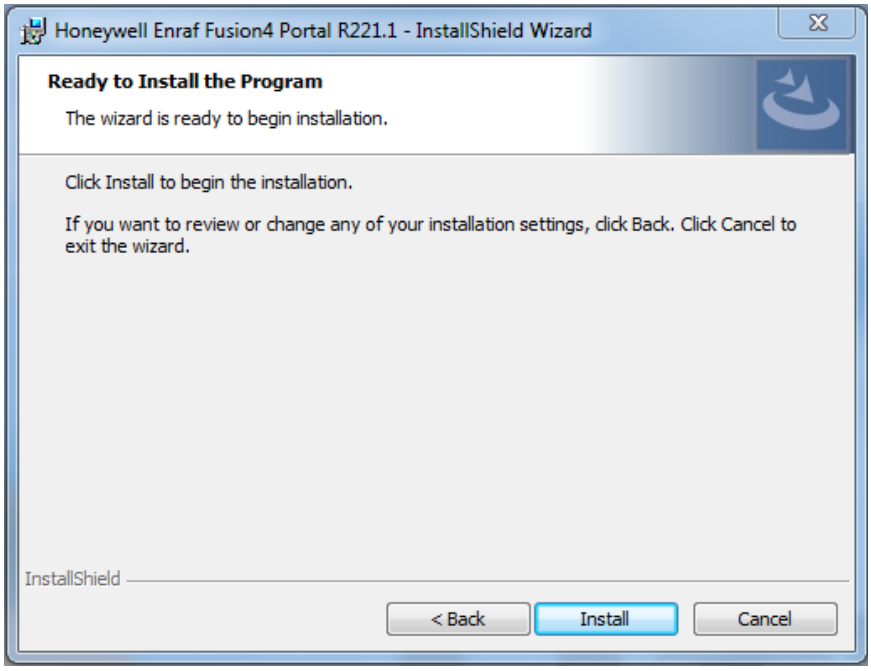
      If you have selected Custom, the Custom Setup window is displayed.



> NOTE: If the optional "OPC Server" function is ordered, then beware that external applications can influence the behavior of Fusion4 Portal through OPC and that certain commands can be issued through OPC.

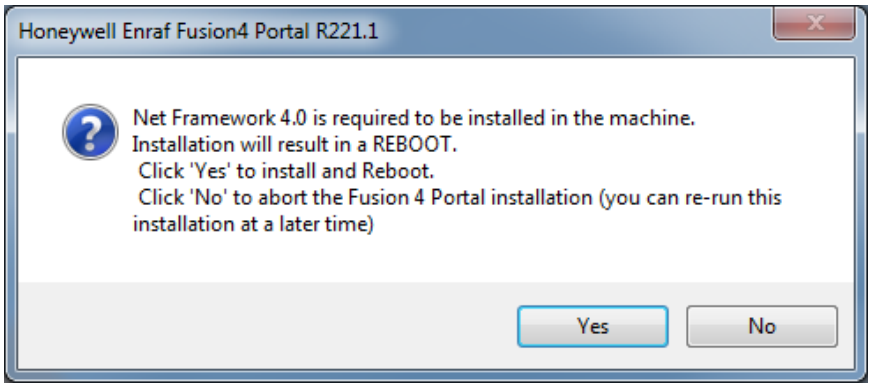
11. Select the Fusion4 Portal features you wish to install and then click Next.

    The Ready to Install the Program window is displayed.



12. Click Install.

> NOTE: If Microsoft .NET Framework 4 is not installed on the computer, the following message is displayed during installation.



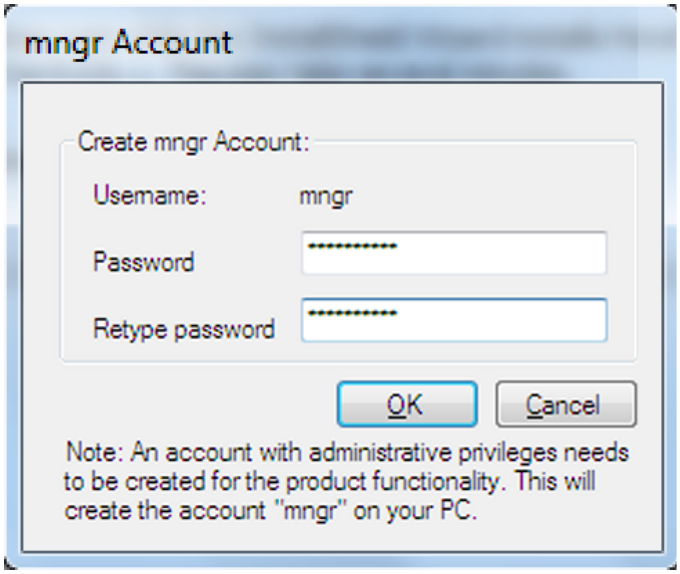
13. Click Yes to install Microsoft .NET Framework 4.

    After Microsoft .NET Framework 4 is installed, the machine is automatically restarted.

14. After the computer is restarted, follow steps 1 to 12 to install Fusion4 Portal.

    The installation of Fusion4 Portal starts.

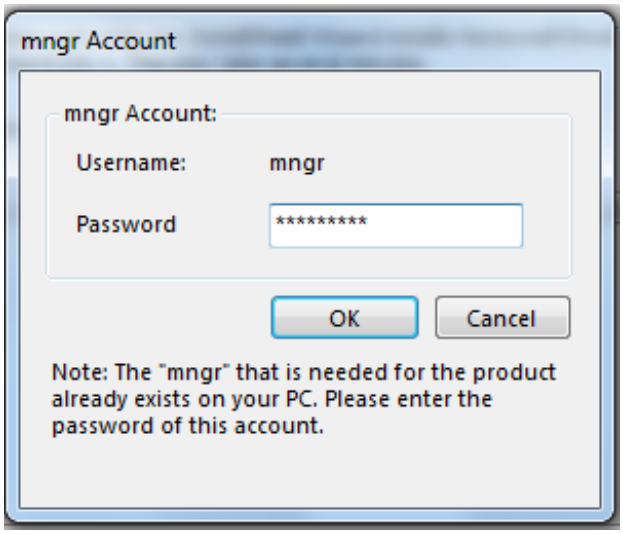
    At the end of the installation of Fusion4 Portal, the mngr Account window is displayed.

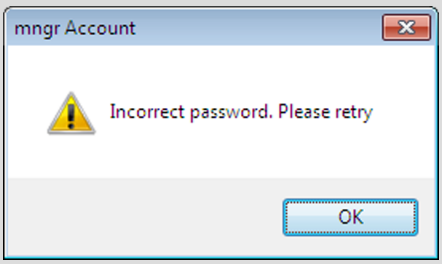


15. In the Password field, enter the password for the mngr account. In the Retype password field, enter the same password again, and then click OK.

> NOTE: The mngr account is needed to keep Fusion4 Portal running when no user is logged on.

16. If the mngr account already exists on your computer, the mngr Account window only contains the Username and Password fields. Enter the existing password and then click OK.

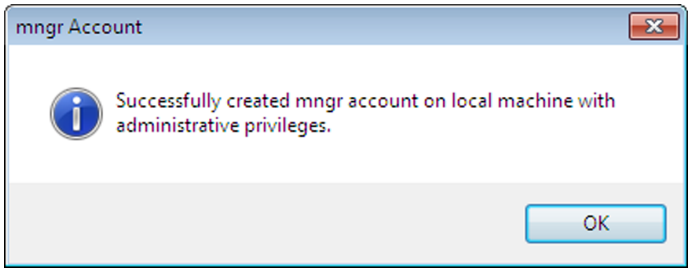


> NOTE: If the password you entered is incorrect, the following message is displayed.
>
> 
>
>
> Click OK to close the message. Enter the correct password.

> CAUTION: If you cannot remember the password for the mngr account, click Cancel in the mngr Account window. Though the installation of Fusion4 Portal continues, you must fix the incorrect password issue in order for

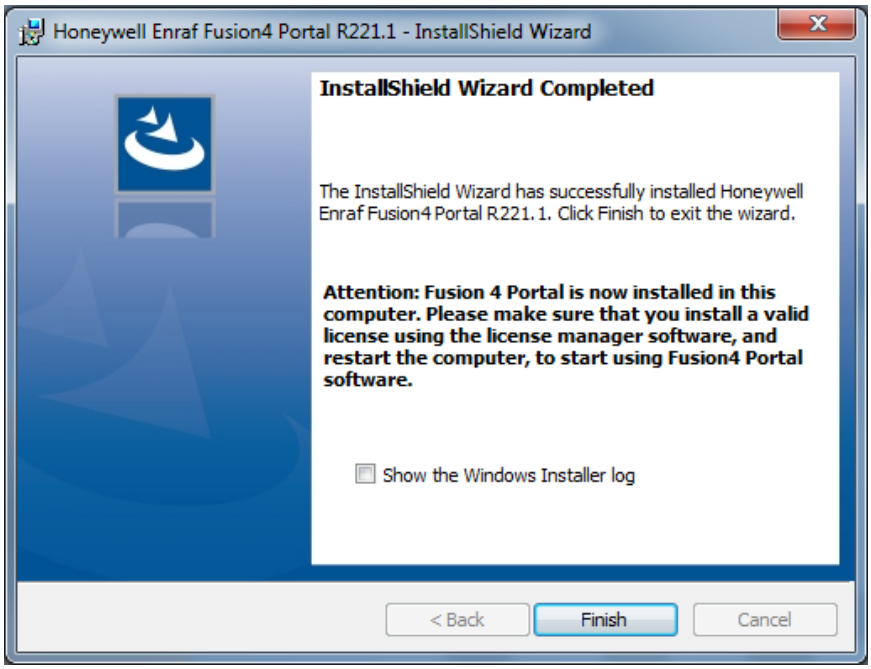
> Fusion4 Portal to work. See Section 13.4.1: Correcting Log On for Enraf BoL Printer Service for more information.

The following message is displayed:



17. Click OK.

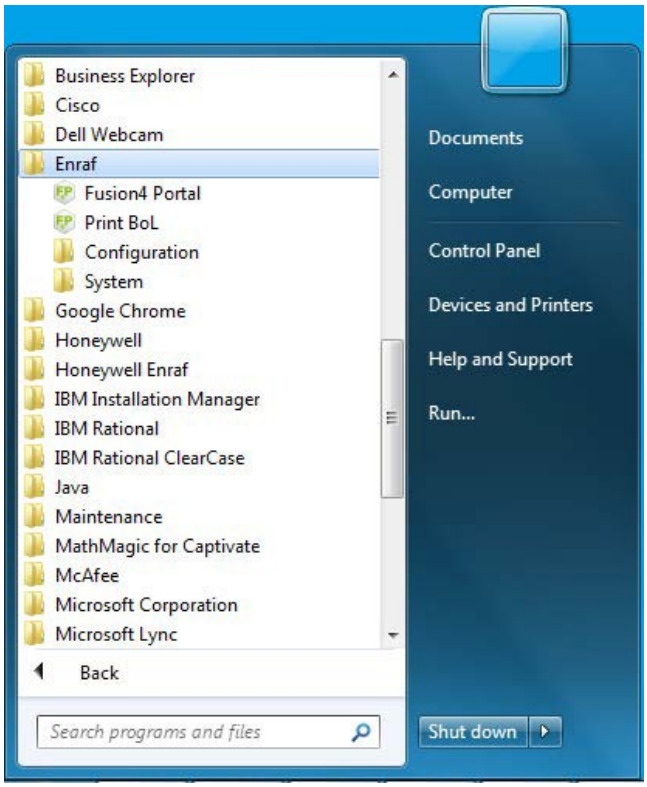
    The InstallShield Wizard Completed window is displayed.



18. Click Finish.

    Fusion4 Portal is installed on your computer.

    The Fusion4 Portal applications are displayed under Start | All Programs | Enraf.



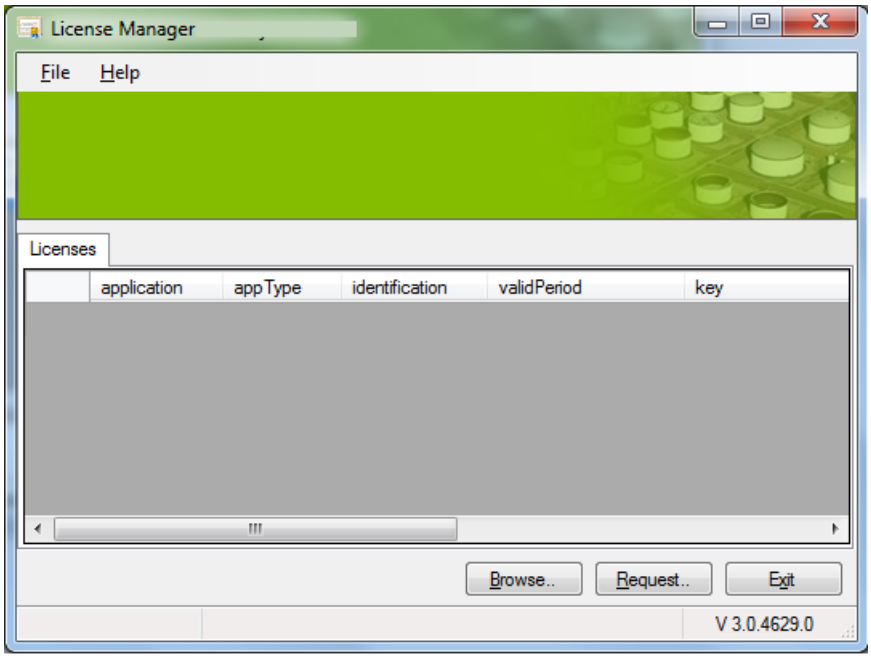
5.3.2 Setting Up a Fusion4 Portal License

After you installed Fusion4 Portal on the computer, you have to set up the license. For obtaining a Fusion4 Portal license, refer to Section 5.2.1: Obtaining a Fusion4 Portal License.

To set up a Fusion4 Portal license, perform the following steps:

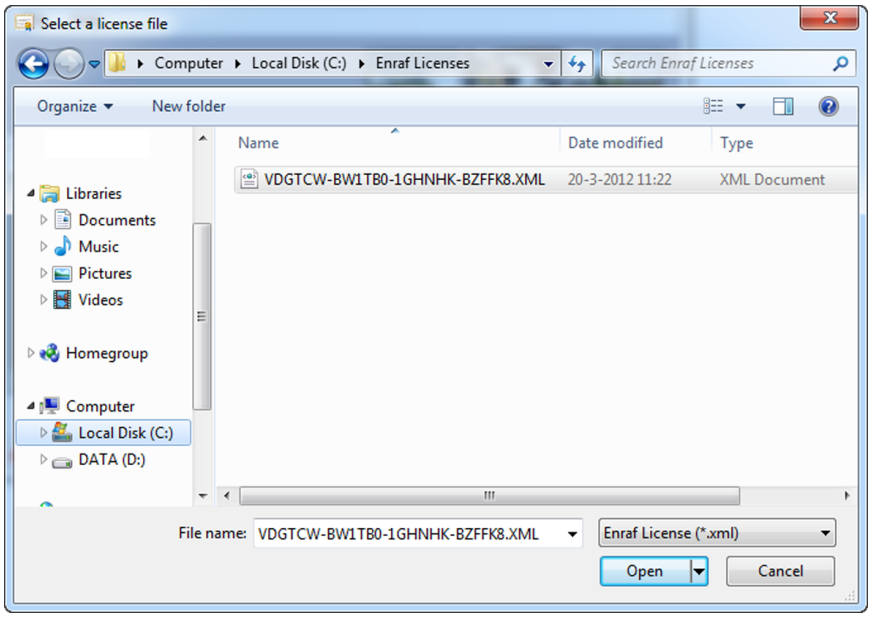
1. From the Start menu, select All Programs | Honeywell Enraf | License Manager | License Manager.

   The License Manager window is displayed.



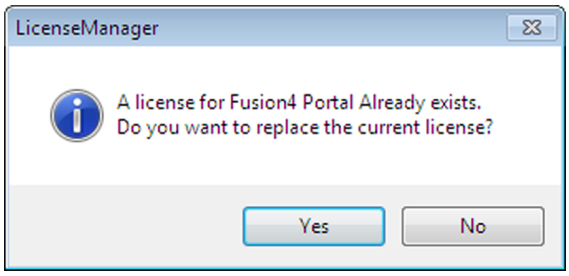
2. From the File menu, select Add a license or click Browse.

   The Select a license file window is displayed.



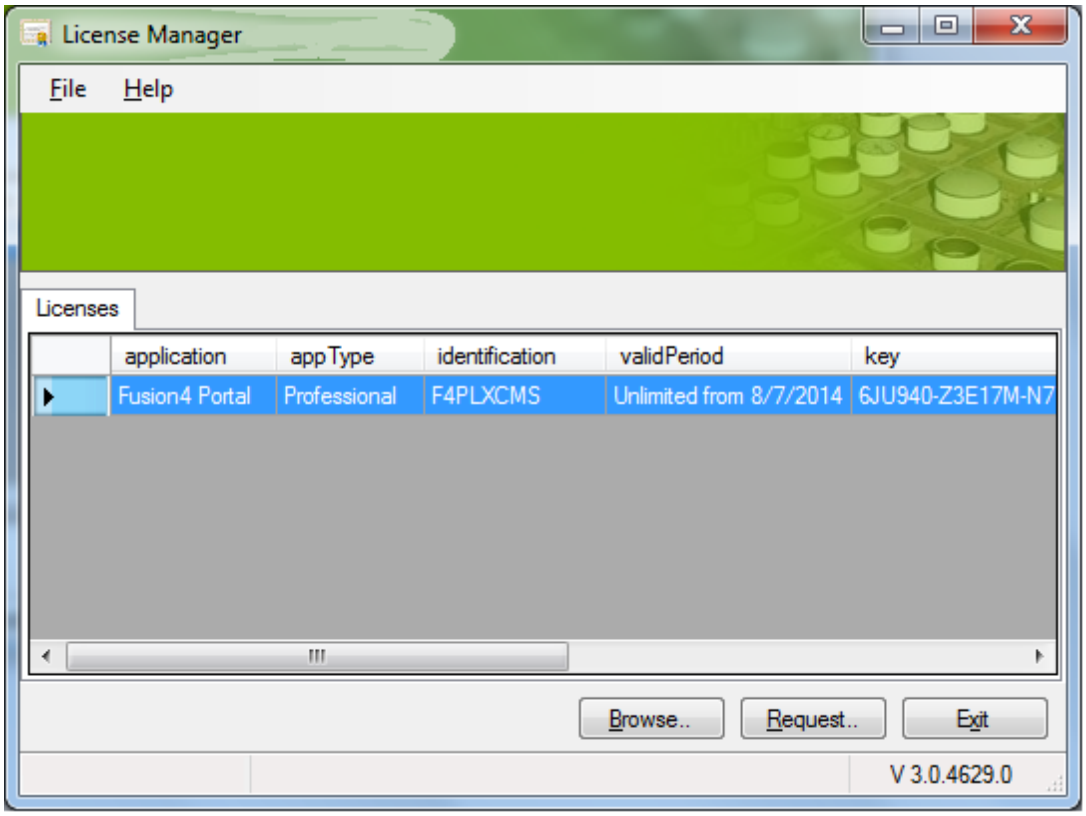
3. Browse to the directory containing the license file.
4. Select the license file and then click Open.

   If a license for Fusion4 Portal already exists, the following message is displayed.



5. Click Yes to replace the old license with the new license.

   The (new) license is displayed in the License Manager window.



6. Click Exit to save the configuration of the license and to close the License Manager window.

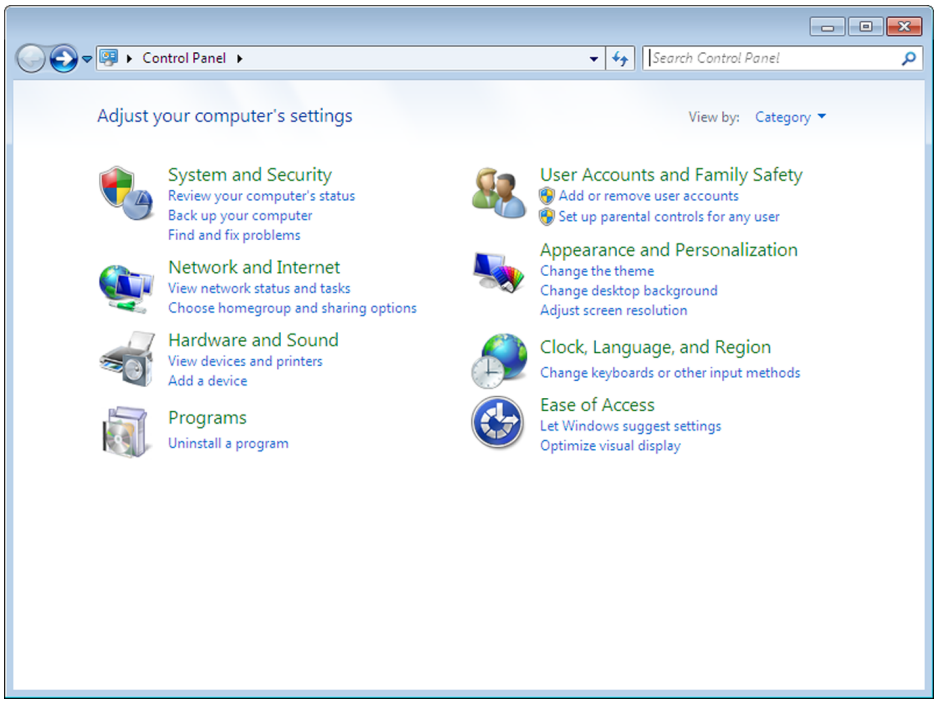
5.3.3 Creating User Accounts

To enable users to log on to, start, stop and use Fusion4 Portal, you have to create user accounts for these users.

> CAUTION: Engineer privilege must be given only to the required individuals who are involved with configuration manipulations and who understand the complete system.
>
> Users with Engineer privilege must not share the confidential data.

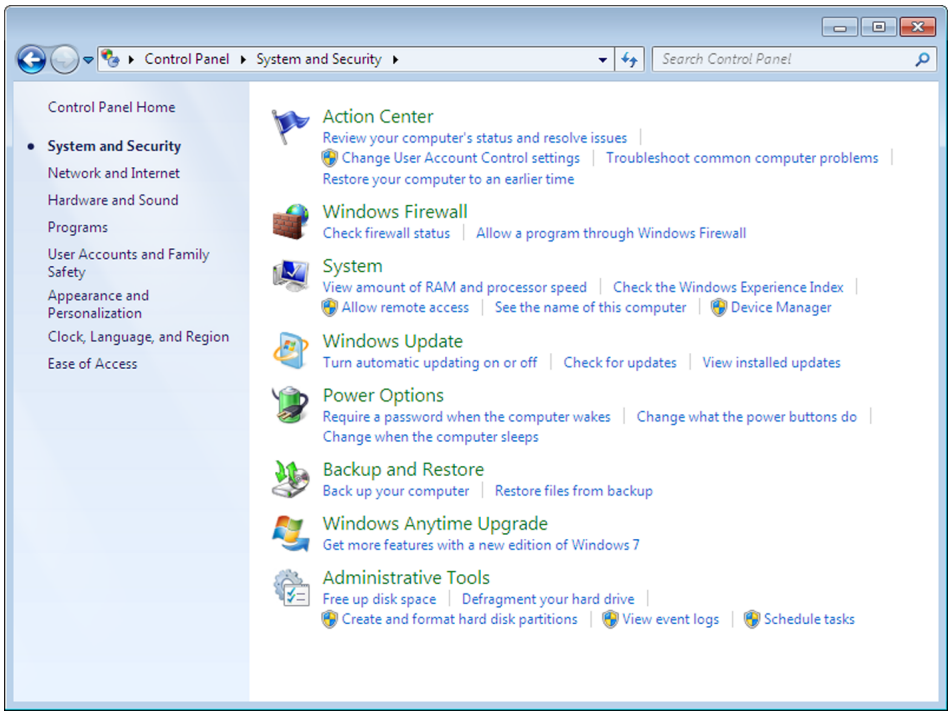
1. Log on to the computer with the “mngr” account.
2. From the Start menu, select Control Panel.

   The Control Panel is displayed.



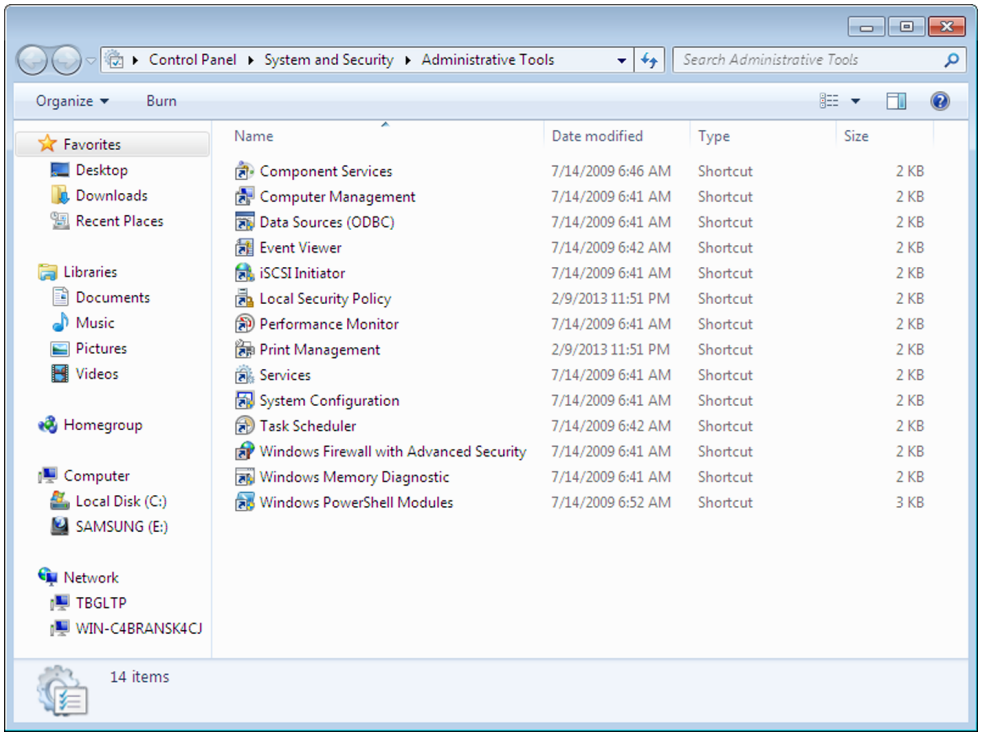
3. Click System and Security.

   The System and Security control panel is displayed.



4. Click Administrative Tools.

   The Administrative Tools control panel is displayed.

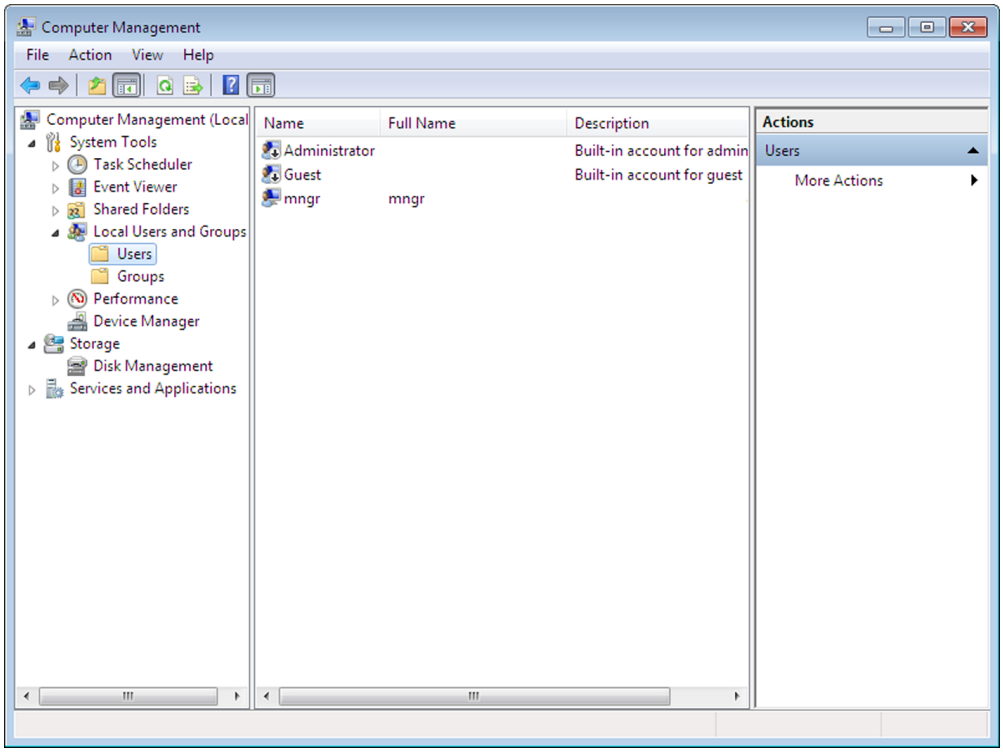


5. Double-click Computer Management.

The Computer Management window is displayed.

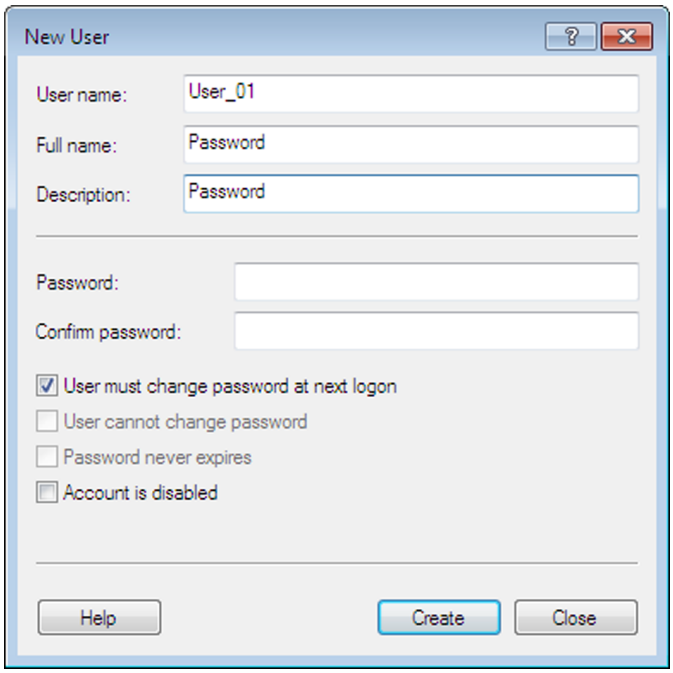
6. Under System Tools, select Local Users and Groups | Users.

   The list of user accounts is displayed.



7. From the Action menu, select New User.

   The New User window is displayed.



NOTE: You can also right-click Users, and then select New User.

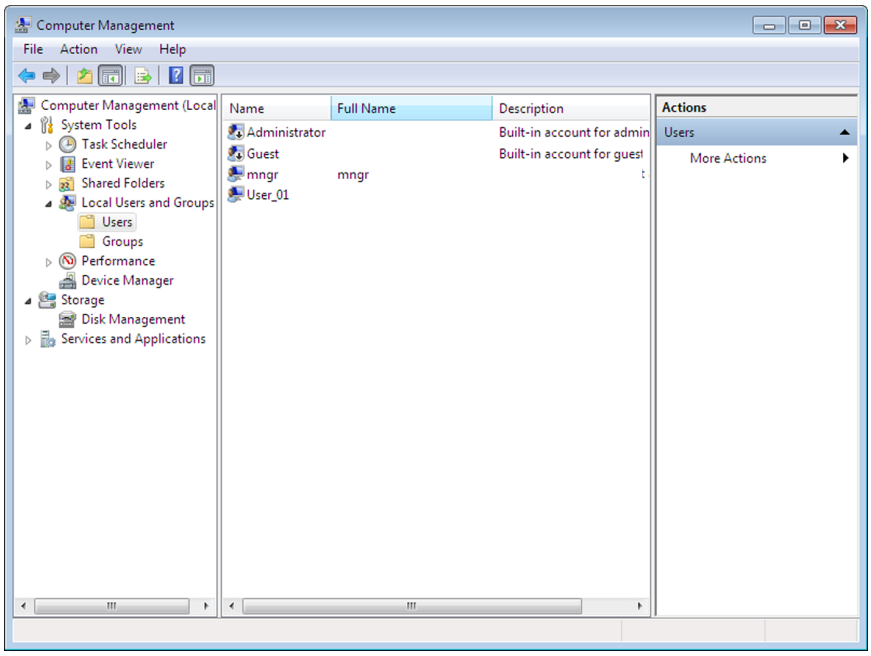
8. Enter the properties of the user account. The properties are described in the following table.

Table 5-1: Description of User Account Properties

Field	Description
User name	Enter the name of the user account.
Password	Enter the password for this user account.
Confirm password	Re-enter the password for this user account.

9. Click Create to create the user account.
10. Click Close to close the New User window.

    The Computer Management window is displayed again. The user account is listed in the list with user accounts.



5.3.4 Assigning Users to a User Group

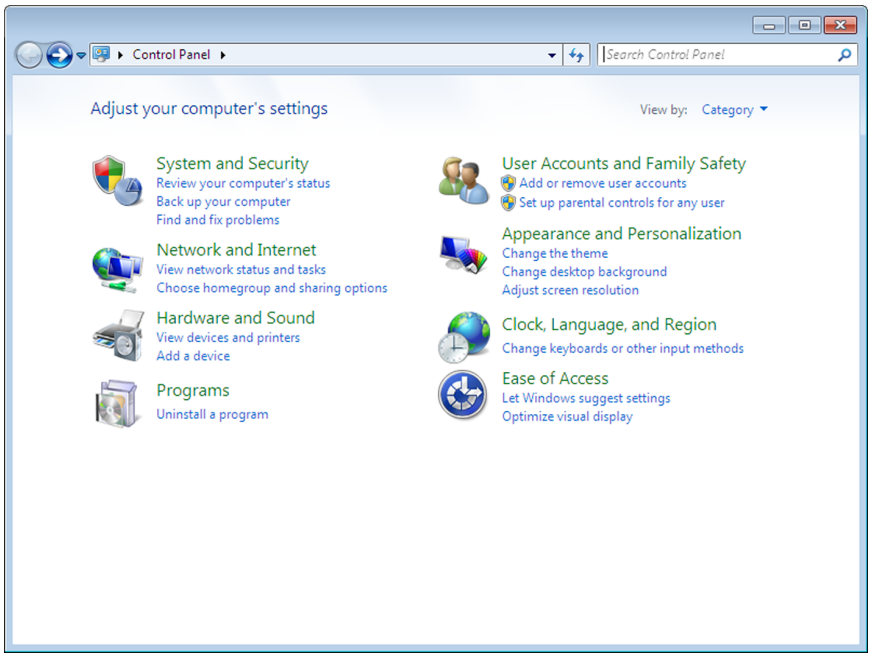
In order for users to have the necessary access rights in Fusion4 Portal, you have to assign each user account you created to the appropriate user group. In Fusion4 Portal, a user account needs to be assigned to one of the following user groups:

- F4PAdministrators
- Engineers
- Operators
- Supervisors

To assign a user account to one or more of the user groups listed above, perform the following steps:

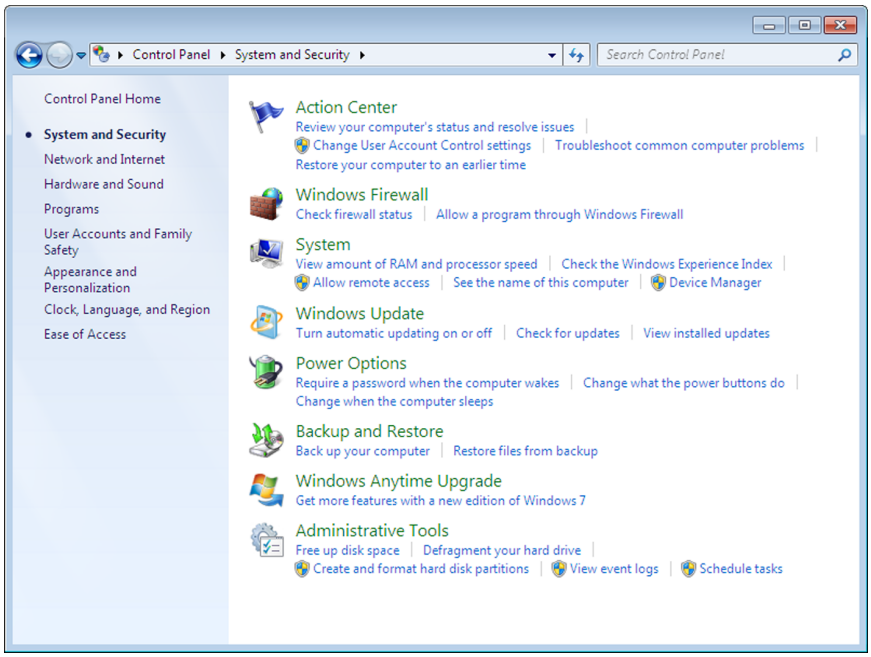
1. Log on to the computer with the “mngr” account.
2. From the Start menu, select Control Panel.

   The Control Panel is displayed.



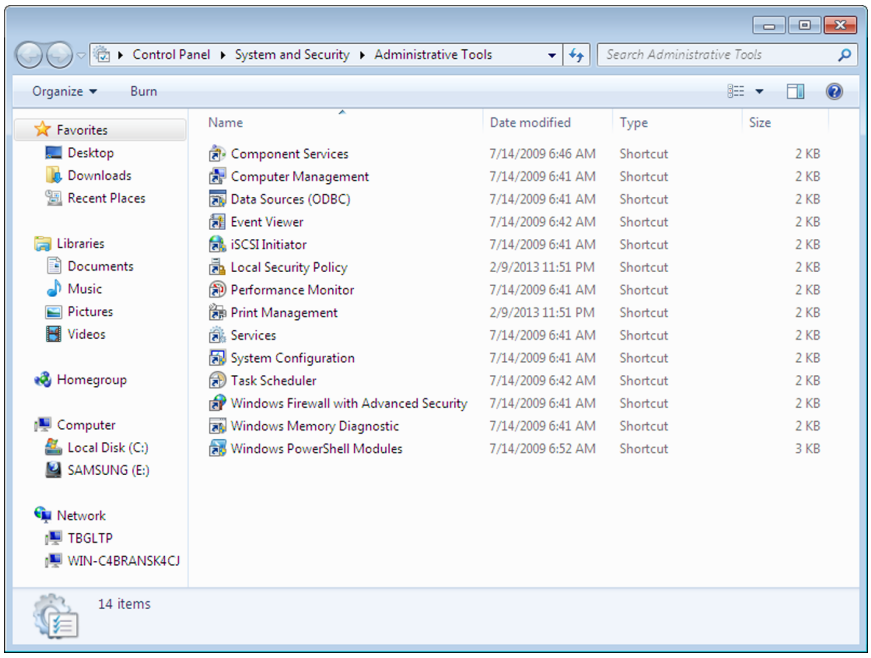
3. Click System and Security.

   The System and Security control panel is displayed.



4. Click Administrative Tools.

   The Administrative Tools control panel is displayed.

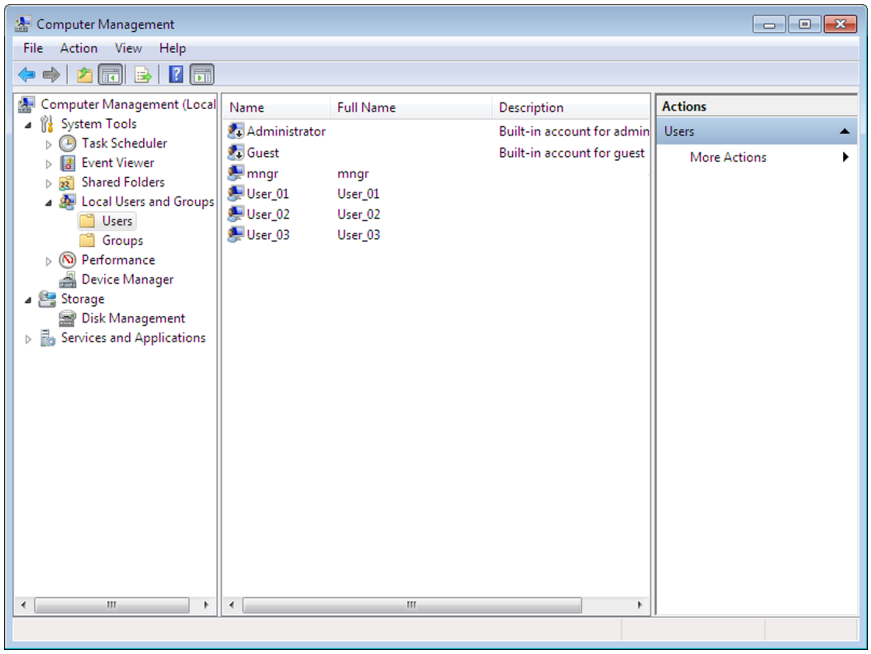


5. Double-click Computer Management.

   The Computer Management window is displayed.

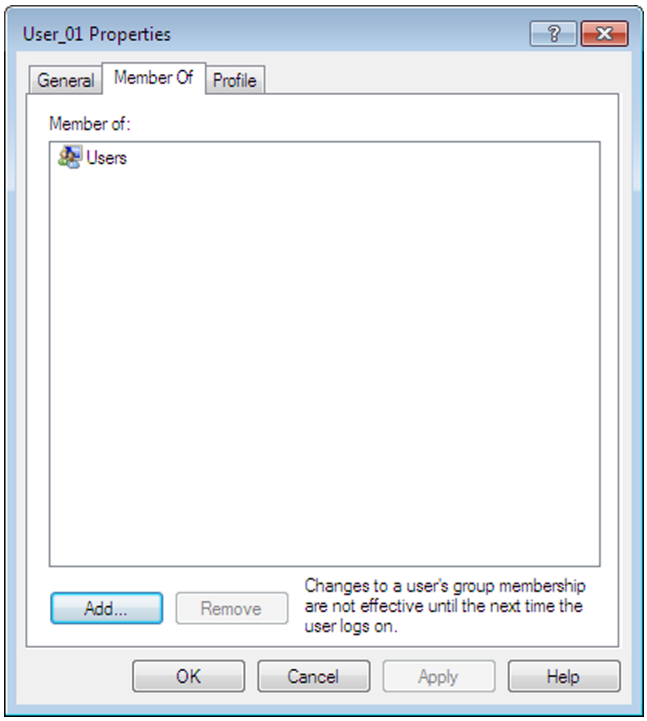
6. Under System Tools, select Local Users and Groups | Users.

   The available user accounts are listed.



7. In the list with available user accounts, select the user account you want to assign to one of the user groups listed above.
8. From the Action menu, select Properties.

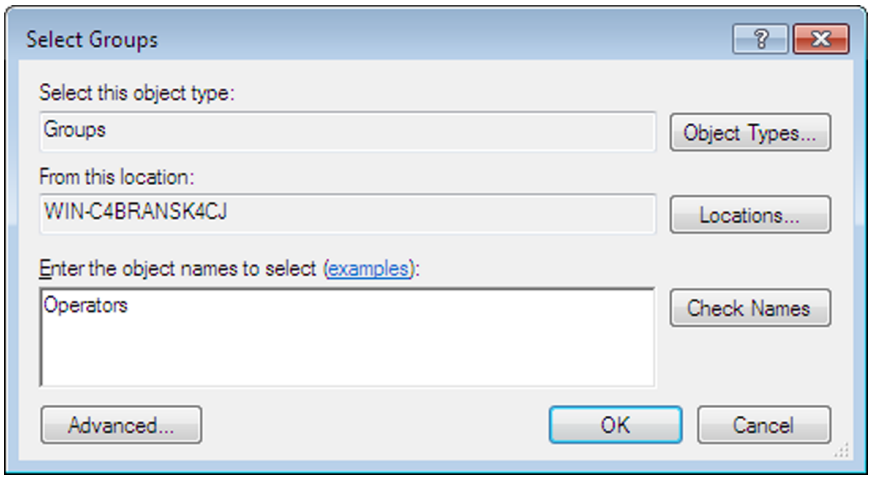
   The Properties window for the selected user is displayed.



> NOTE: You can also right-click the name of the user in the list of users, and then select Properties.

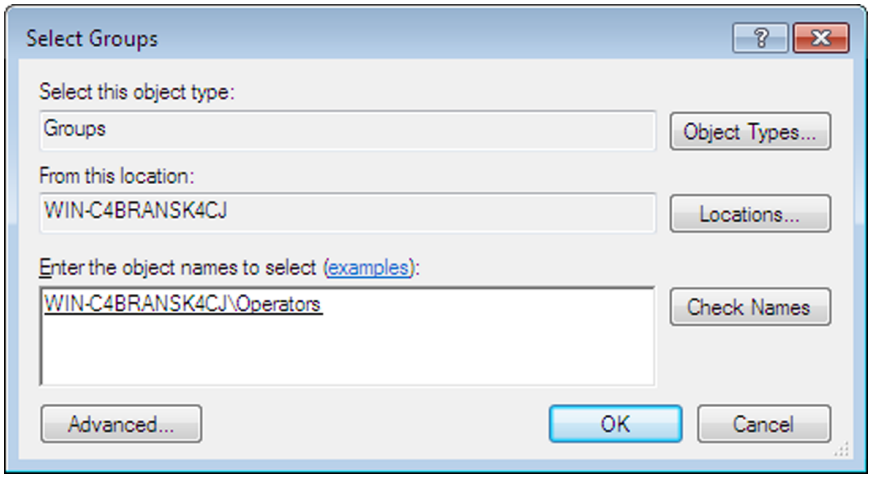
9. Click the Member Of tab.
10. Click Add.

    The Select Groups window is displayed.



11. Enter the name of the user group you want to assign the selected user to in the Enter the object names to select text box, and then click Check Names.

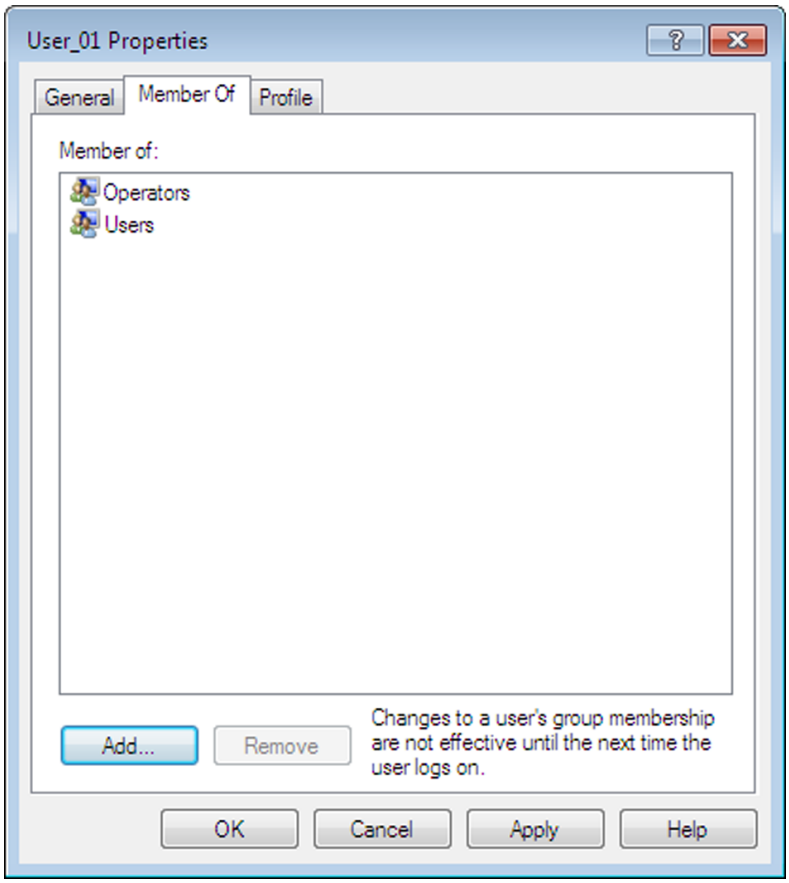
    If the name of the user group you entered is located, the name including its location is displayed in the text box.



12. Click OK to save the changes and then close the window.

    The Properties window for the selected user is displayed. The user group to

which you assigned the user is listed under Member of.



13. Click OK to save the changes and to close the window.

5.3.5 Configuring the Default Printer

The printer that is used to print the Bills of Lading, Transaction summaries, and Schedule reports must be configured as the default printer.

> NOTE: Before configuring a printer as default printer, install the printer drivers.

To configure the printer, perform the following steps:

1. Log on to the computer with the “mngr” account.
2. From the Start menu, select Control Panel.

   The Windows Control Panel is displayed.
3. Click Hardware and Sound.

The Hardware and Sound control panel is displayed.

4. Click Devices and Printers.

   The Devices and Printers window is displayed.

5. Under Printers and Faxes, right-click the printer you want to use as default printer, and then select Set as default printer.

   A check mark is displayed indicating that the printer is setup as default printer. Also when you right-click the printer, the Set as default printer option is checked.

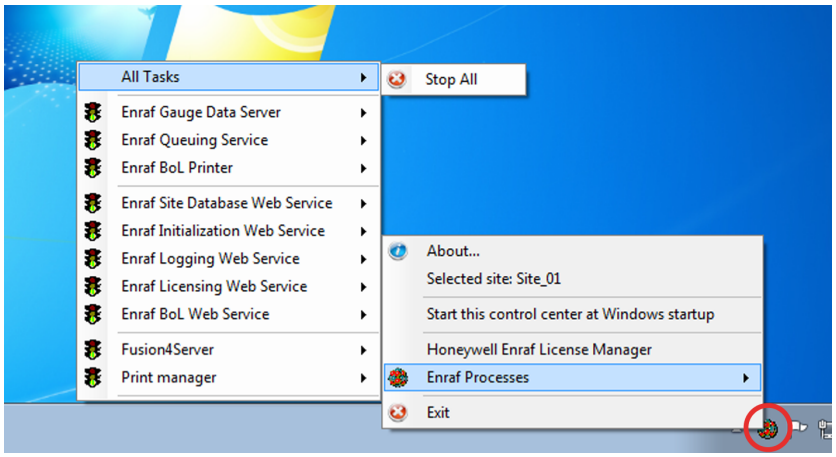
5.3.6 Restarting the Computer

After you configure the default printer, you must shutdown and restart the computer.

5.4 Removing ('Uninstalling') Fusion4 Portal

To remove (uninstall) Fusion4 Portal from your computer, perform the following steps:

1. Close Fusion4 Portal.
2. Stop all services and exit the Enraf Process Control Centre (EPCC).
   a. Right-click the EPCC icon in the system tray.



b. In the EPCC user interface, choose Enraf Processes | All Tasks | Stop All to stop all services.

c. Ensure that all the EPCC user interface displays all services, and that Fusion4Server and Print manager are stopped.

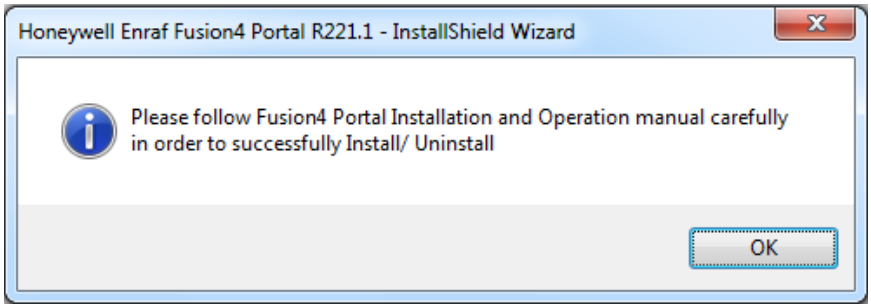
d. In the EPCC user interface, select Exit to exit the EPCC.

3. Insert the Fusion4 Portal CD-ROM into the CD-ROM or DVD drive on your computer.

   The Fusion4 Portal R222.3 splash screen is displayed.

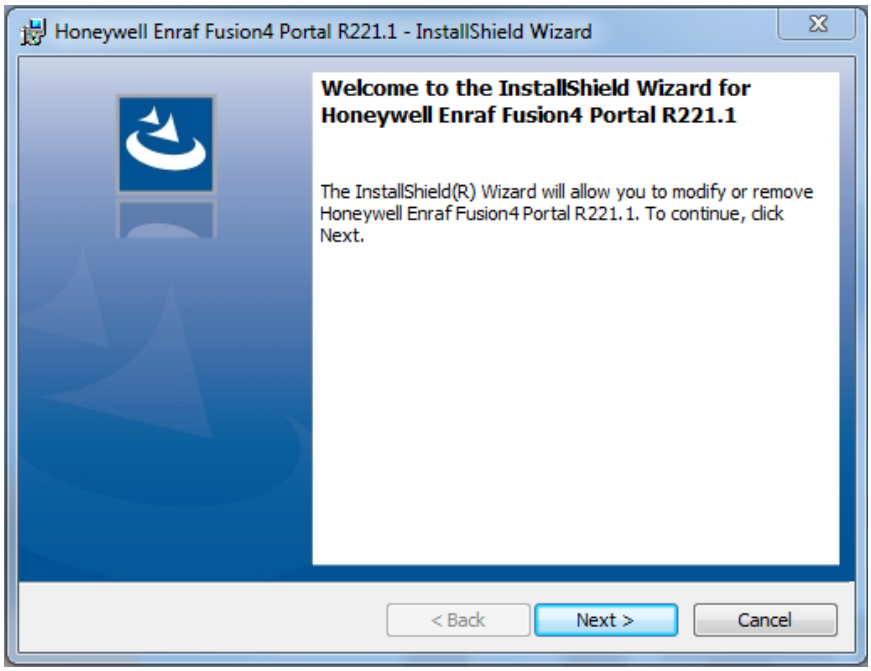
4. Click Install at the top left side of the window.

   The following message is displayed:



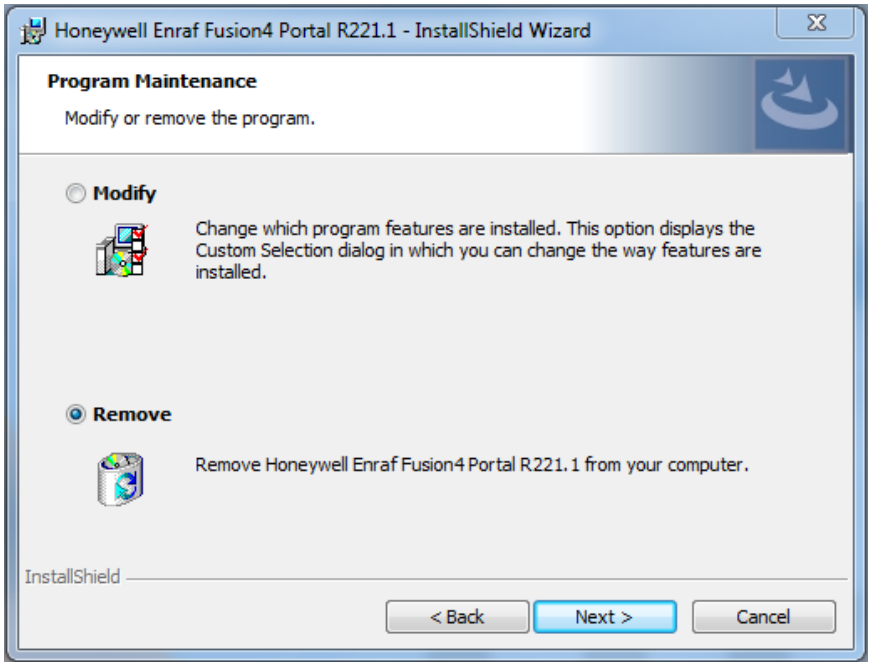
5. Click OK.

   The Welcome to the InstallShield Wizard for the Fusion4 Portal R222.3 window is displayed.



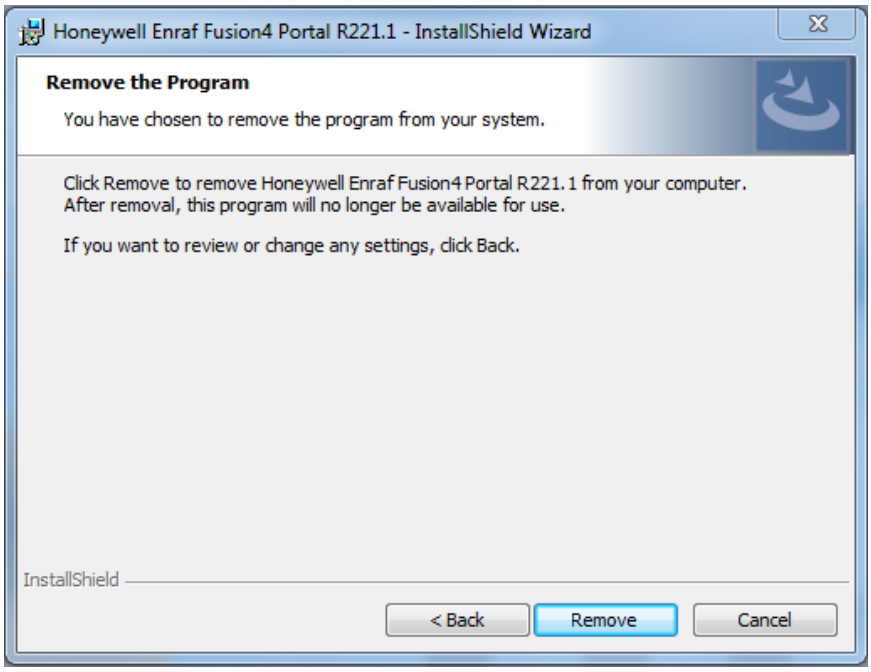
6. Click Next.

   The Program Maintenance window is displayed.



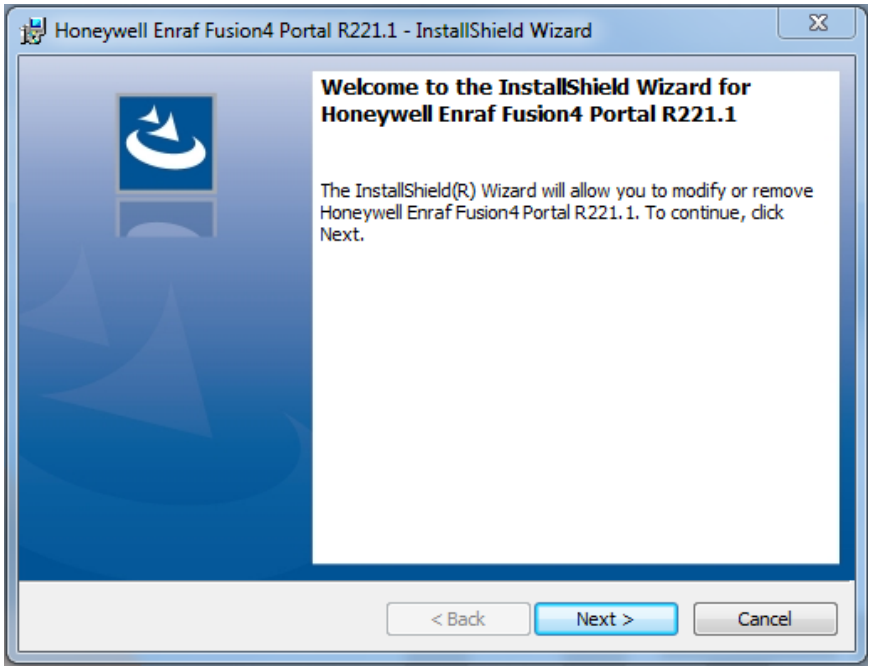
7. Select Remove and then click Next.

   The Remove the Program window is displayed.



8. Click Remove to remove Fusion4 Portal.

   When Fusion4 Portal is removed from the computer, the InstallShield Wizard Completed window is displayed.



9. Click Finish.

> NOTE: After removal of Fusion4 Portal, the following programs remain on the computer: SAP Crystal Report runtime engine for .NET Framework 4 (32-bit) and OPC Core Components 2.00 Redistributable. Furthermore, the site database and the contents of the BoL store, if present, are not deleted.

6 Site Settings

> CAUTION:
>
> - The configuration of Fusion4 Portal should be carried out by a user with Supervisor or Engineer privileges or by F4PAdministrators
> - Operators who are logged in are allowed to start Fusion4 Portal and have read-only access, i.e. they can read the various parameters but do not have the rights to change them

Fusion4 Portal enables you to:

- Create and maintain a visual representation of a site and site database to support 1010CB load controllers (1010CBs), Single Stream Controllers for Additive Injection (SSC-As), Single Stream Controllers for Blending (SSC-Bs), Multi-stream Controllers for Additive Injection (MSC-As), and Multi-stream Controllers for Loading (MSC-Ls). (Refer to Section 6.1: Creating and Maintaining a Site Database)
- Configure and maintain the properties of a site (Refer to Section 6.2: Configuring Site Settings)

To start the Fusion4 Portal, perform the following step:

1. From the Start menu select All Programs | Enraf | Fusion4 Portal.

   The main window of Fusion4 Portal is displayed.

Figure 6-1: Fusion4 Portal main window

NOTE:

- The first time you start Fusion4 Portal, the window is empty as no site has been created yet.
- Ensure that the EPCC window is not displayed in the center of the monitor.

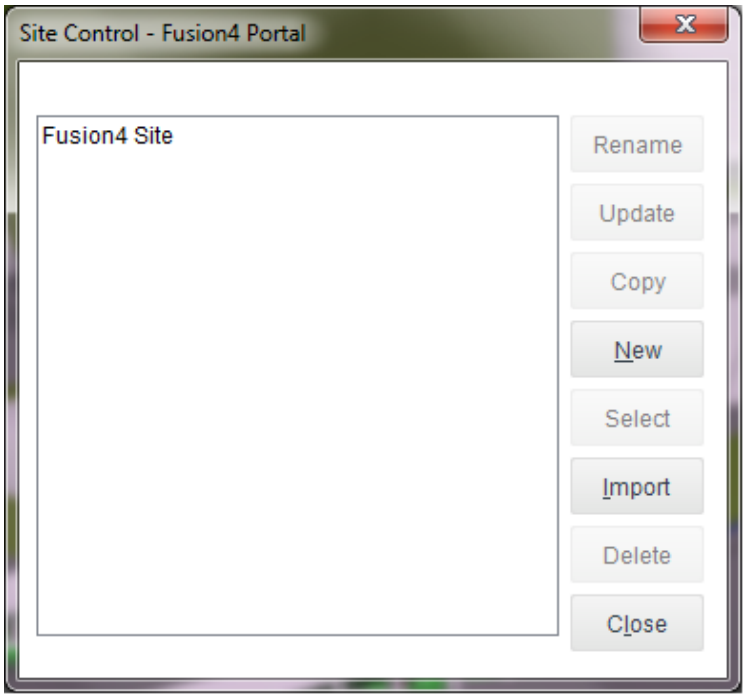
6.1 Creating and Maintaining a Site Database

6.1.1 Creating a Site Database

To create a site, perform the following steps:

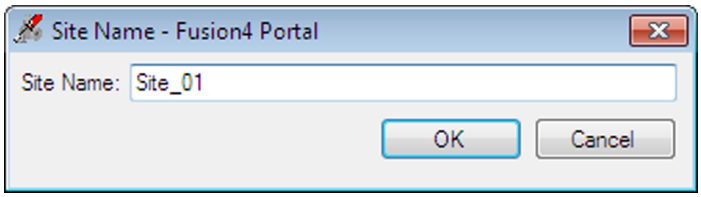
1. Start Fusion4 Portal.
2. From the File menu, select New... or press [Ctrl+N].

   The Site Control window is displayed.



3. Click New.

   The Site Name window is displayed.



4. Enter the site name (maximum 32 characters) and then click OK.

   The new site is displayed in the site tree.

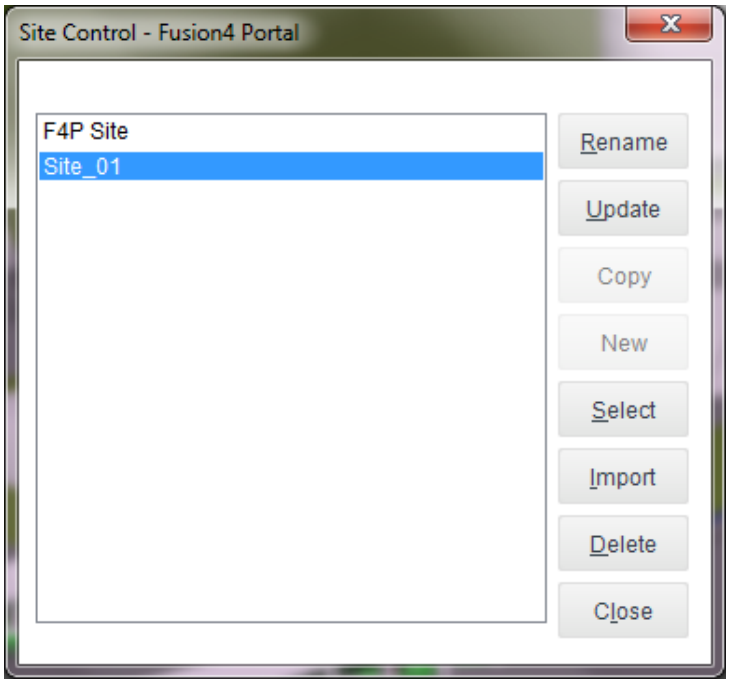
> NOTE: The site name is displayed on the Bill of Lading.

6.1.2 Renaming a Site Database

To rename a site, perform the following steps:

1. If the site you want to rename is opened, close it. From the File menu, select Close.
2. From the File menu, select Open or press [Ctrl+O].

The Site Control window is displayed.



3. In the Site list, select the site you want to rename.

   The name of the site is highlighted.

4. Click Rename.

   The Site Name window is displayed.

5. Enter the new name of the site and then click OK.

   The site is renamed.

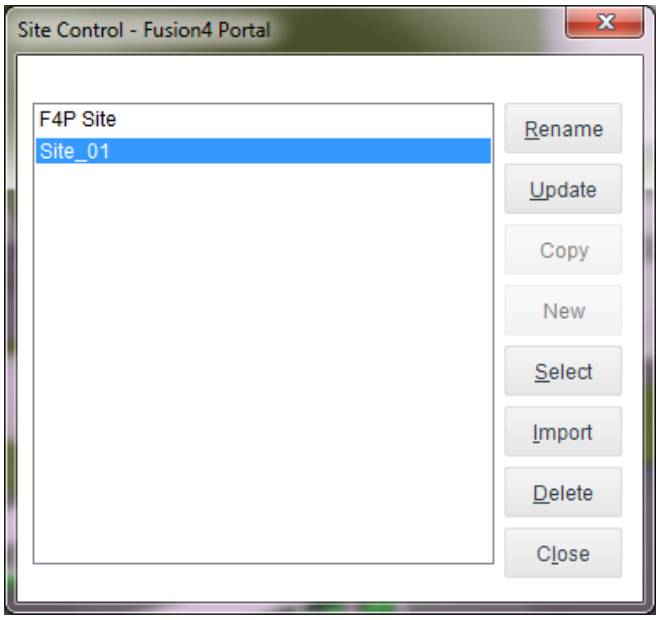
6.1.3 Deleting a Site Database

To delete a site, perform the following steps:

1. If the site you want to delete is opened, close it. From the File menu, select Close.

2. From the File menu, select Open or press [Ctrl+O].

   The Site Control window is displayed.

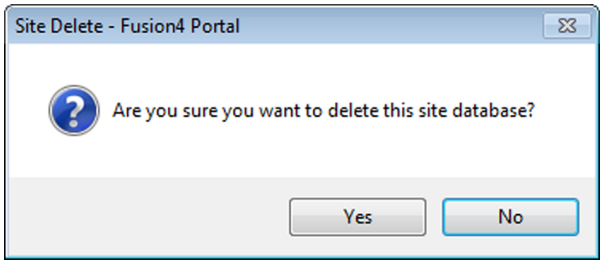


3. In the Site list, select the site you want to delete.

   The name of the site is highlighted.

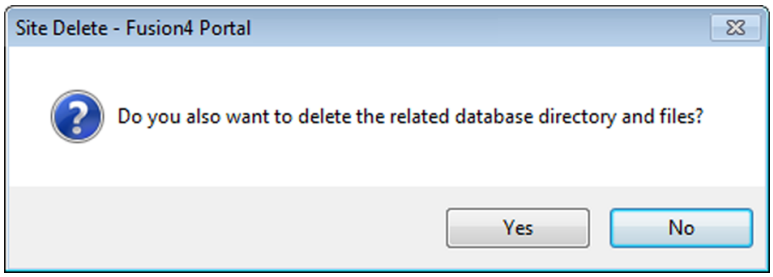
4. Click Delete.

   The following message is displayed:



5. Click Yes to delete the site.

   The following message is displayed:



6. Click Yes to delete the database directory and related files.

The site is removed.

> NOTE: If you click No, the site is removed from the site list in the Site Control window only, but remains stored in the Fusion4 Portal machine.

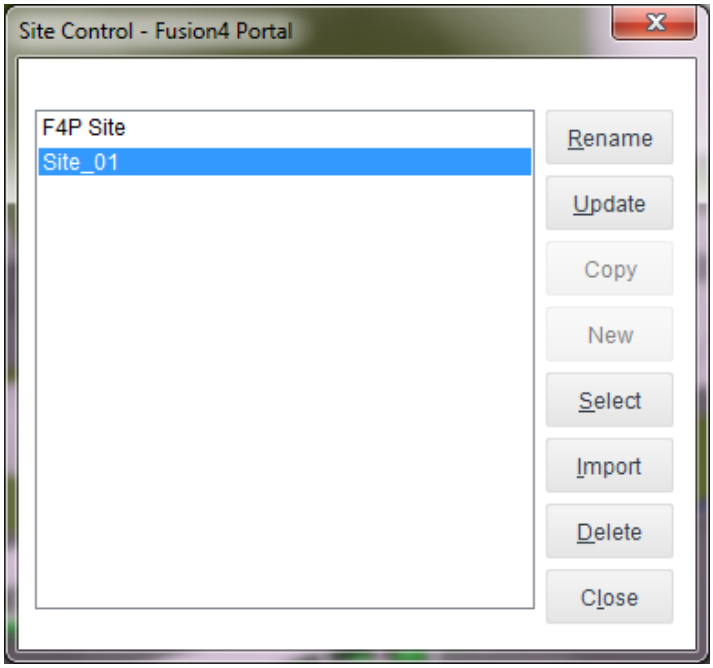
6.1.4 Importing a Site Database

You can import a site database that was already created.

To import an already created site database, perform the following steps:

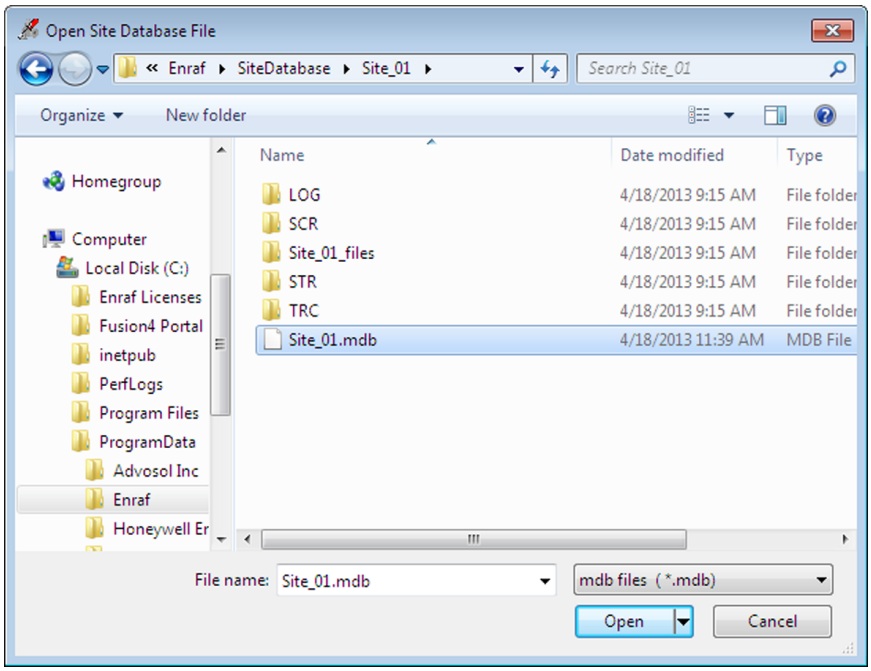
1. From the File menu, select Import.

   The Site Control window is displayed.



2. Click Import.

   The Open Site Database File window is displayed.



3. Browse to the directory containing the site database file (.mdb file).
4. Select the site database file and then click Open.

   The site database is imported.

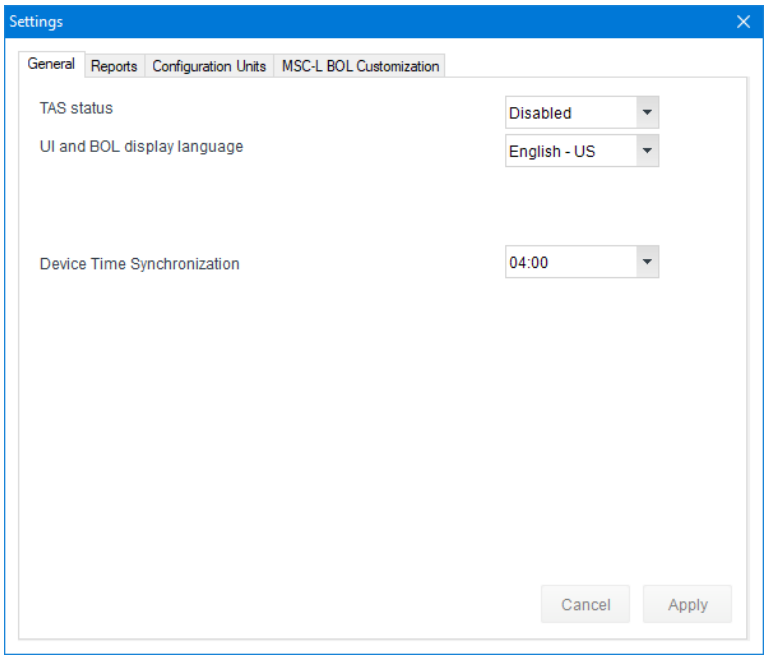
6.2 Configuring Site Settings

You can configure the site settings such as general, reports, configuration units, and MSC-L BOL customization.

> CAUTION: The settings that you configure using these tabs are applicable to the selected site.

1. In Fusion4 Portal, select File > Settings.

   The Settings dialog box is displayed.



2. In the General tab, configure the following settings.

Table 6-1: Description of General Settings

Field	Description
TAS Status	Enables you to determine if and how a connected Terminal Automation System (TAS) influences the behavior of Fusion4 Portal. • Disabled - The presence or absence of the connected TAS does not influence the behavior of Fusion4 Portal. • Binary - The connected TAS announces its presence/absence by a writeable OPC item from Fusion4 Portal, which is either True or False. • Time Ticker - The connected TAS indicates its presence by continuously changing the value of a writeable OPC item from Fusion4 Portal. If the changing of the value of the OPC item stops, then Fusion4 Portal behaves as if the TAS is absent. The value for this field must be an integer. NOTE: The TAS status has only influence on 1010CB devices.

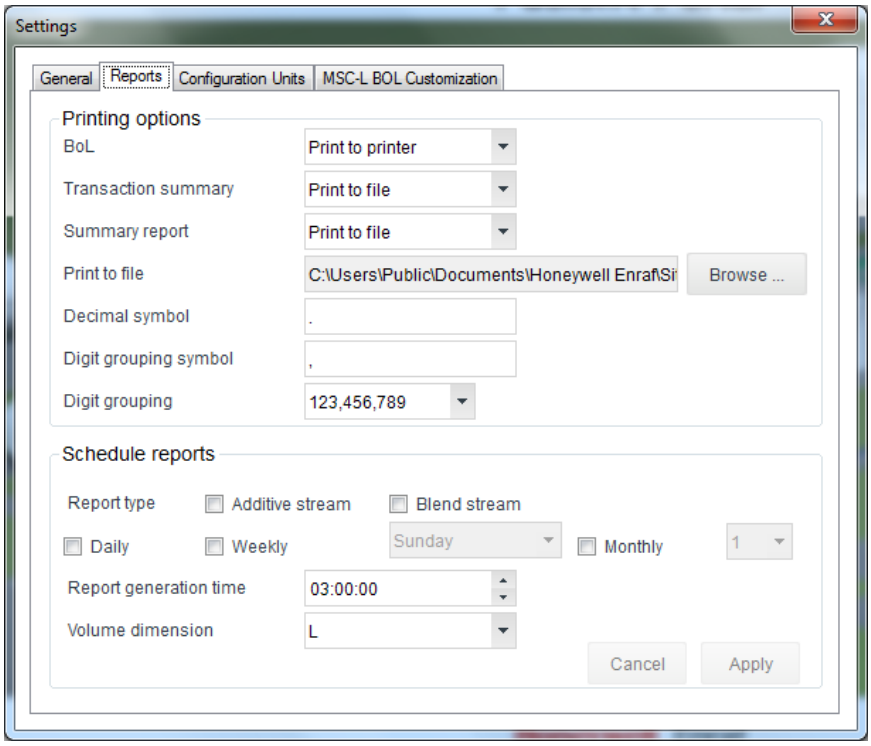
Field	Description
UI and BOL language	Enables you to configure the language in which the Fusion4 Portal application and reports (BoL, transaction summary, and summary reports) must be displayed. By default, the Fusion4 Portal application supports the following 13 languages. • English - US • English - UK • French • German • Dutch • Spanish • Chinese • Japanese • Polish • Portuguese • Italian • Swedish • Hindi

Field	Description
Device Time Synchronization	This feature maintains the date and time coordination between the Fusion4 Portal computer clock and all the Fusion4 clocks across Fusion4 Devices (MSCL, MSCA, SSCB, SSCA). When there is a mismatch in the time due to the clock drift, the Device Time Synchronization setting enables to sync the time between Fusion4 Portal computer clock and each clock of the Fusion4 devices. The Default Disabled option is set for disabling time sync. NOTE: The process repeats in every 24 hrs at the configured time. If there is any configuration change needed, then restart the Fusion4 Time Sync service. For R221.1 sites close the existing sites and reopen it using below menu item. File -> Open and click on Select Database.

For example, if you select the language as “Chinese” and restart the Fusion4 Portal machine, the Fusion4 Portal application is localized to “Chinese” as shown in the following figure.

3. Click the Reports tab.

The dialog box is displayed as follows.



4. In the Reports tab, configure the following settings.

Table 6-2: Print Settings

Field	Description
Print to printer	To print a hard copy of the reports (BoL, transaction summary, and summary reports) using the default printer for the "mngr" account.
Print to file	To save the reports (BoL, transaction summary, and summary reports) as a PDF file. By default, the path to the "Print to file" storage folder is 'C:\Users\Public\Documents\Honeywell Enraf\[Site Name]'. You can also change the path where the PDF files must be saved using the Browse. button. See also Section 6.2.1: Printing reports to file.
Disable print	Automatic printing of reports (BoL, transaction summary, and summary reports) is disabled.

Table 6-3: Description of Report Settings

Field	Description
Printing options	
BoL	When a new transaction is retrieved from the 1010CB, SSC-B, and MSC-L devices, the BoL can be generated based on the settings configured in the the table above.
Transaction Summary	For every 25 additive transactions retrieved from the SSC-A or MSC-A devices, the additive transaction reports can be generated based on the settings configured in the table above.
Summary report	Based on the schedule reports configuration, the additive and blend summary reports can be generated based on the settings configured in the above table. NOTE: The Disable Print option is not applicable.
Print to File	The Bills of Lading, transaction summaries, and/or summary reports are saved in the path configured in this field. For more information, see Section 6.2.1: Printing reports to file.
Decimal symbol	The value configured in this field is used to indicate the decimal point symbol in the BoL, transaction summary reports, and summary reports.
Digit grouping symbol	The value configured in this field is used to indicate the digit grouping symbol in the BoL, transaction summary reports, and summary reports.
Digit grouping	The value configured in this field is used to indicate the digit grouping in the BoL, transaction summary reports, and summary reports
Schedule report	

Field	Description
Report type	• Additive Stream - If you want to generate summary reports for additive streams, select the check box. Otherwise, leave the check box empty. • Blend Stream - If you want to generate summary reports for blend streams, select the check box. Otherwise, leave the check box empty. By default, these check boxes are not selected.
Report Schedule Types	• Daily - If you want to generate the summary reports on a daily basis, select the check box. Otherwise, leave the check box empty. • Weekly - If you want to generate the summary reports on a weekly basis, select the check box. Subsequently, select the day of the week (Sunday to Saturday) on which the summary reports have to be printed. If you do not want to generate the summary reports on a weekly basis, leave the check box empty. • Monthly - If you want to generate the summary reports on a monthly basis, select the check box. Subsequently, select the date of the month (1 to 31) on which the summary reports have to be printed. If you do not want to generate the summary reports on a monthly basis, leave the check box empty. NOTE: If the date configured is not applicable for a month, the monthly reports are generated on the last day of the month. For example: If the date configured is "31" and if the month does not have 31 days, then the reports are generated on 30th day.

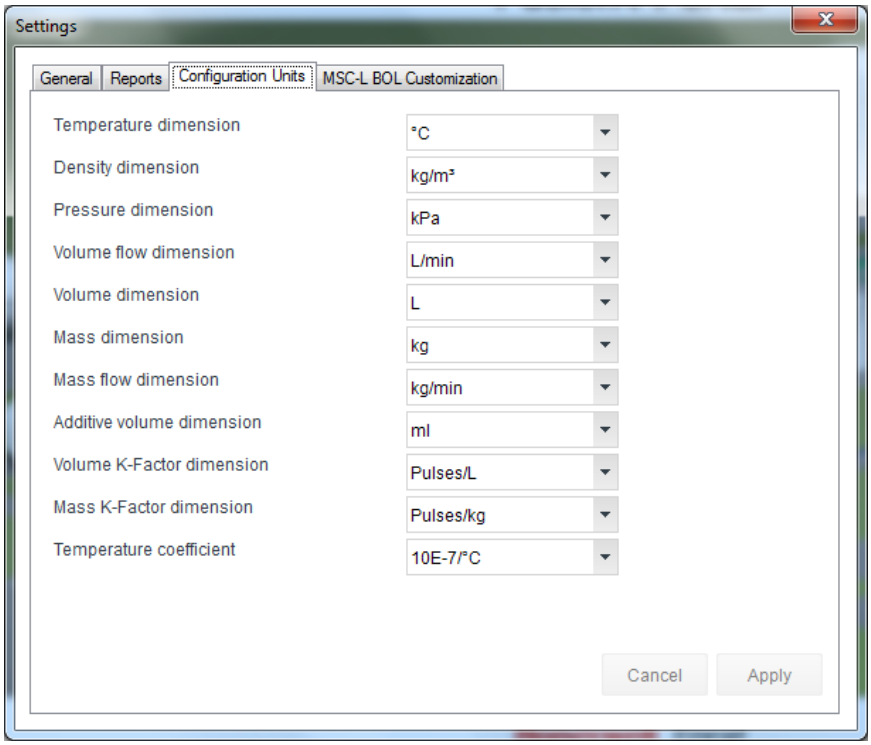
Field	Description
Report generation time	Enter the time at which the summary reports have to be generated. The default time is '03:00:00' (03:00 AM). NOTE: To ensure that the report generation runs smoothly, enter a time at which no transactions or hardly any transactions take place.
Volume dimension	The volume units displayed in summary reports is based on the value specified in this field. The available values are L, m3, US gal, and bbl.

NOTES:

- When a language is selected, the decimal and digit separators are set accordingly. You can overrule these settings, i.e. use a comma instead of a dot for a decimal separator and/or use a dot instead of a comma for a digit separator.
- Ensure that the values in Windows region and language settings (Decimal symbol, Digit grouping symbol, and Digit grouping) match the values configured in the Fusion4 Portal application.

5. Click the Configuration Units tab.

   The dialog box is displayed as follows.



6. In the Configuration Units tab, configure the following settings.

> **NOTES:**
>
> - Fusion4 Portal always uses the engineering units of the real device when printing and storing the transaction data.
> - The device configurations are displayed with these units in the Fusion4 Portal application.

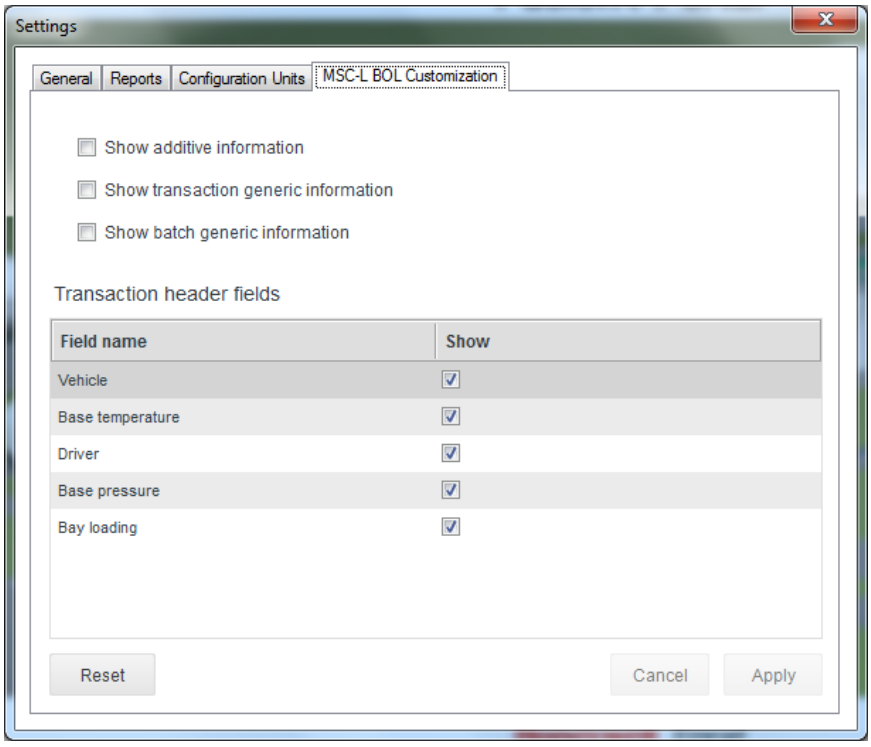
Table 6-4: Description of Configuration Units Settings

Field	Description
Temperature dimension	°C or °F
Density dimension	kg/m3, °API, lbs/ft3, RD60, kg/l
Pressure dimension	kgf/cm2, Pa, kPa, psi, psi_r100, psi_r1000
Volume flow dimension	m3/min, L/min, bbl/min, US gal/min, UK gal/min, cm3/min, dm3/min

Field	Description
Volume dimension	L, m3, bbl, Ugal, cm3, dm3
Mass dimension	kg, ton, US ton, US ton, bs or long ton
Mass flow dimension	kg/min, metric ton/min, Lb/min, UK Long tn/min
Additive volume dimension	ml or cc
Volume K-Factor dimension	Pulses/L, Pulses/m3, Pulses/gal, Pulses/bbl, Pulses/Ugal, Pulses/cm3, Pulses/dm3
Mass K-Factor dimension	Pulses/kg, Pulses/ton, Pulses/US ton, Pulses/lb, Pulses/long ton
Temperature coefficient	10E-7/°C, 10E-7/°F

7. Click the MSC-L BOL Customization tab.

   The dialog box is displayed as follows.



8. In the MSC-L BOL Customization tab, you can customize the MSC-L BOL for a particular site. Configure the following settings.

Table 6-5: Description of the MSC-L BOL Customization Settings

Field	Description
Show additive information	You can display the additive information in the MSC-L BOL reports. The additive information is displayed in the Compartment totals section.
Show transaction generic information	You can display the generic information of a transaction in the MSC-L BOL reports. The transaction generic information is displayed in the BoL header section.
Show batch generic information	You can display the generic information of a batch in the MSC-L BOL reports. The batch generic information is displayed in the Batch specifications section.
Transaction header fields	Vehicle, Base temperature, Driver, Base pressure, and Bay loading Based on the check boxes selected, the details are displayed in the BoL header section.

9. Select the appropriate check boxes to display the corresponding details in the MSC-L BoL reports.

10. After updating the required settings, click Apply.

    The site settings are configured.

6.2.1 Printing reports to file

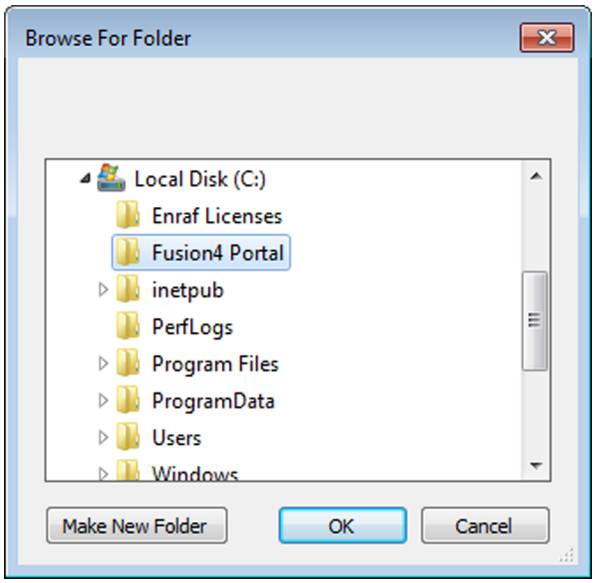
If the Bills of Lading, transaction summaries, and/or summary reports have to be printed to file, you have to enter the path to the storage folder. See Table 6-3: Description of Report Settings.

By default, the path to the Print to file storage folder is 'C:\Users\Public\Documents\Honeywell Enraf\[SiteName]'. The folder is created during the creation of a site in Fusion4 Portal. You can change the location of the storage folder to another drive in the same machine or to a remote machine which is on the same network.

> NOTE: If you choose to change the location of the storage folder on a remote machine on the same network, the 'mngr' user account must have full access control to this folder.

1. Click Browse....

   The Browse For Folder window is displayed.



2. Browse to the folder where the Bills of Lading, transaction summaries, and/or summary reports have to be stored. Then click OK.

   The Browse For Folder window is closed. The name of the storage folder including the path is displayed.

7 Auto Discover

> CAUTION: Auto-discover can be carried out by a user who belongs to the Supervisor, Engineer, or F4PAdministrators group.

You can automatically build the site tree by scanning the Fusion4 devices, which are connected via Serial or Ethernet ports, to the Fusion4 Portal machine.

> NOTE: You can automatically discover the Fusion4 devices only, and not the 1010CB device.

If you automatically discover the same site again, the new devices added along with the existing devices are discovered.

> WARNING: If a new device with the FlexConn address same as that of an existing device is discovered in the same port and if the old device is not found, then the old device is deleted from the site tree.

Fusion4 Portal enables you to:

- Automatically discover sites (Refer to section Section 7.1: Discovering sites).
- Automatically discover devices connected to ports (see section Section 7.2: Discovering devices connected to ports).
- Automatically discover devices (see section Section 7.3: Discovering device boards).

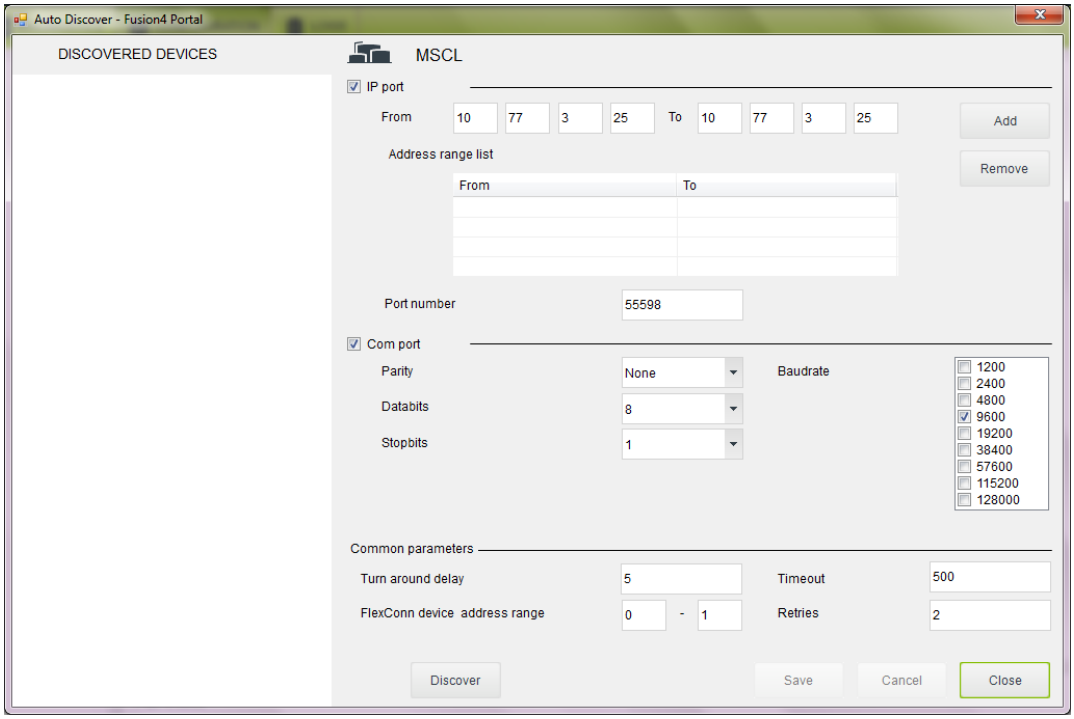
7.1 Discovering sites

1. Start Fusion4 Portal.

   The following window is displayed.

2. Right-click the site name and then click Auto Discover.

   The Auto Discover window is displayed.



3. To discover the devices that are connected through Ethernet, perform the following based on the Ethernet configurations in the device:

a. Select the IP port check box.

b. In the From and To boxes, type the IP range.

c. Click Add.

   The selected range is displayed under Address range list.

d. In the Port number box, the default port number is displayed. If the value is changed in the FlexConn TCP Port in the device, ensure that you enter the same in this field.

4. To discover the devices that are connected through serial communication, configure the following based on the serial COM configurations in the device:

   a. In the Parity drop-down list, type the parity of the selected communication port. Select Even, Odd, or None.

   b. In the Databits drop-down list, type the number of data bits of the selected communication port. Select either 7 or 8.

   c. In the Stopbits drop-down list, type the number of stop bits of the selected communication port. Select either 1 or 2.

   d. In the Baudrate section, select the check boxes corresponding to the baud rates of the selected communication port.

      The available values are 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200, and 128000. The default baud rate is selected as 9600.

5. Under Common parameters, configure the following:

   a. In the Turn around delay box, type the value for delay of serial communication. This delay is the time between reply and request of the next message, and is used for the field connection. Enter 0 if the IP port is used to connect an SSC-A, SSC-B, MSC-L, or MSC-A.

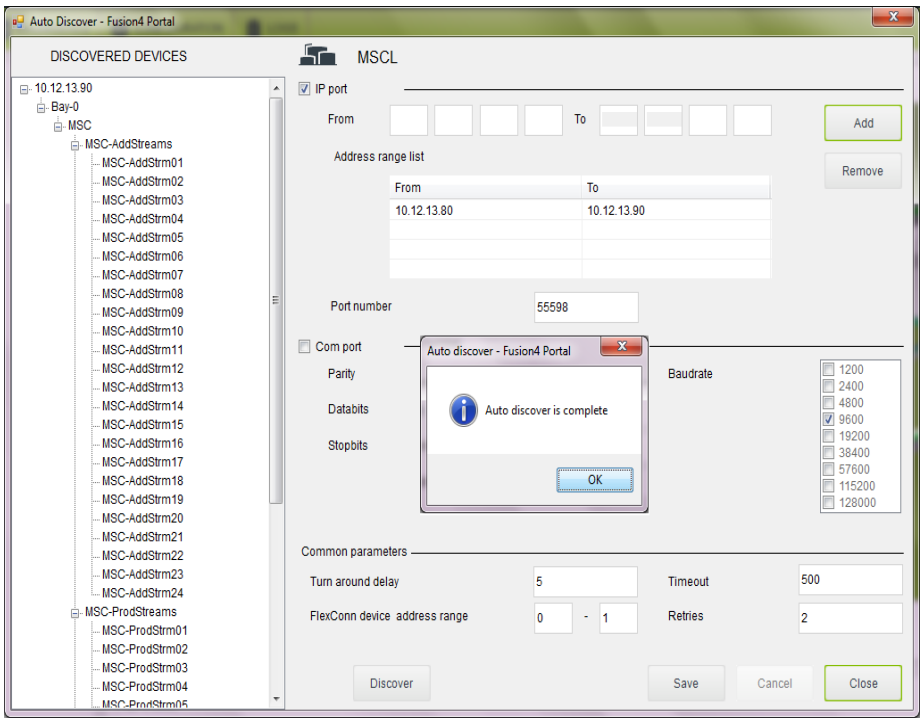
   b. In the Timeout box, type the time out value of serial communication. This time out is the time between request and reply and is used for the field connection. Enter 500 if the IP port is used to connect an SSC-A, SSC-B, MSC-L, or MSC-A

c. In the FlexConn device address range boxes, type the range of the communication address of the devices. The range is based on the number of devices connected to the port address.

d. In the Retries box, type the number of retries in case of communication failure. Enter 0 if the IP port is used to connect an SSC-A, SSC-B, MSC-L, or MSC-A.

6. Click Discover.

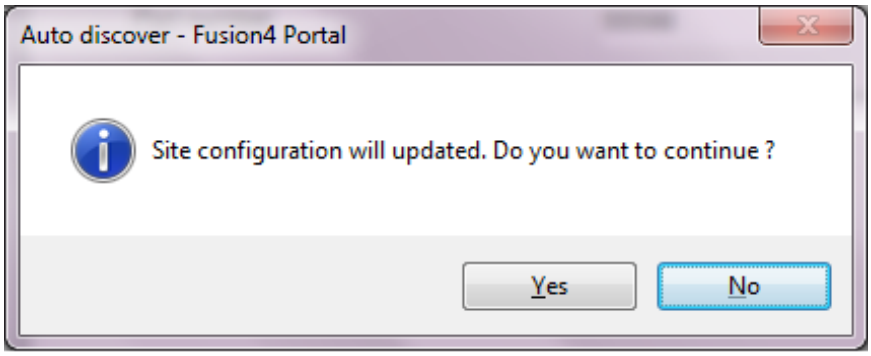
   All the Fusion4 devices are discovered and displayed under DISCOVERED DEVICES on the left pane, as displayed in the following figure.



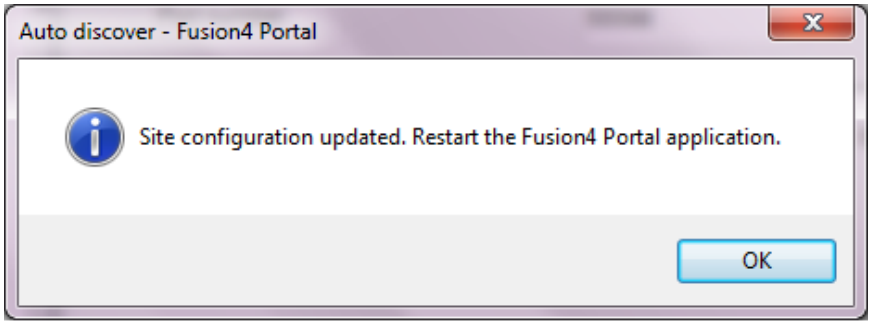
7. Click OK.

8. Click Save to save the discovered site.

   The following message is displayed.



9. Click Yes. The site configuration is updated and the following message is displayed.



10. Restart the Fusion4 Portal application.

    The site tree is updated with the Fusion 4 devices as displayed in the following window.

> NOTE: Ensure that you restart the F4P machine to fetch the transactions and alarms.

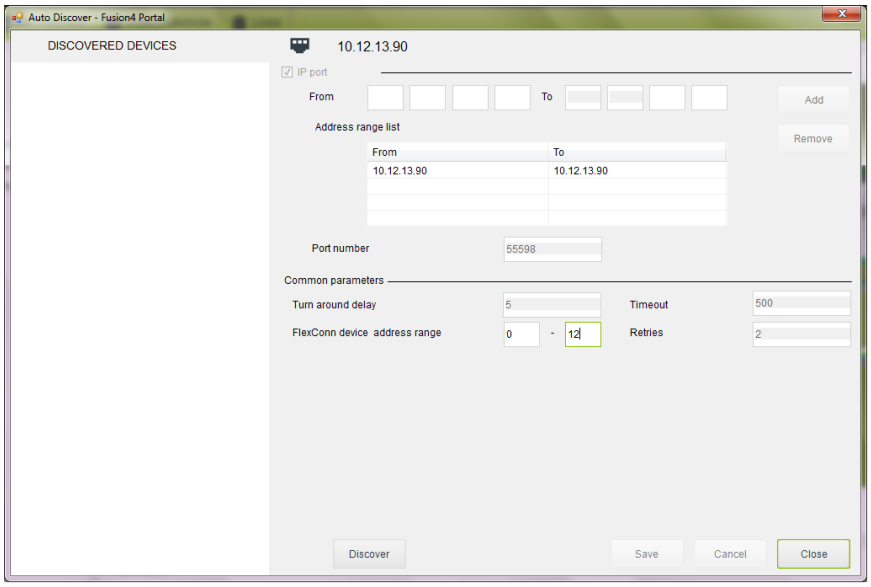
7.2 Discovering devices connected to ports

You can automatically discover the devices connected to the COM ports or IP ports.

7.2.1 Discovering devices connected to IP ports

1. Start Fusion4 Portal.
2. In the site tree, right-click the IP port name, and then click Auto Discover.

   The Auto Discover window is displayed with values of the selected IP port.

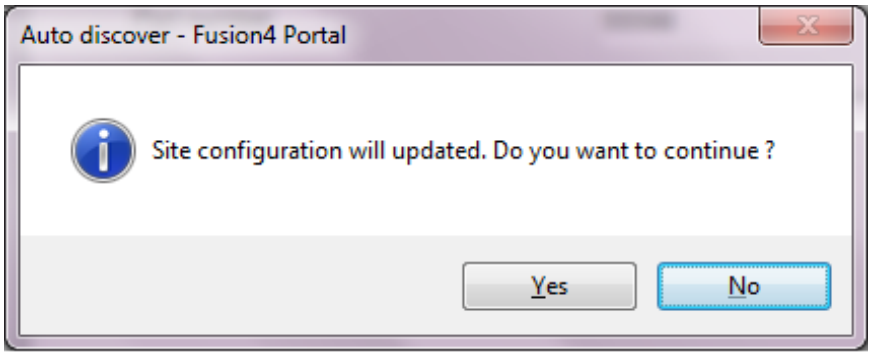


3. In the FlexConn device address range boxes, type the range of the device addresses. The range is based on the number of devices connected to the port address.
4. Click Discover.

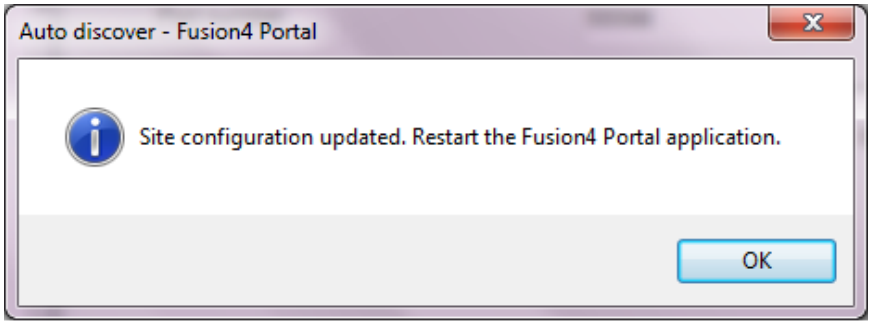
   All the Fusion4 devices are discovered and are displayed under DISCOVERED DEVICES on the left pane. A message is displayed indicating that the auto discover is complete.

5. Click OK.
6. Click Save to save the discovered devices connected through the IP ports.

   The following message is displayed.



7. Click Yes. The site configuration is updated and the following message is displayed.



8. Restart the Fusion4 Portal application.

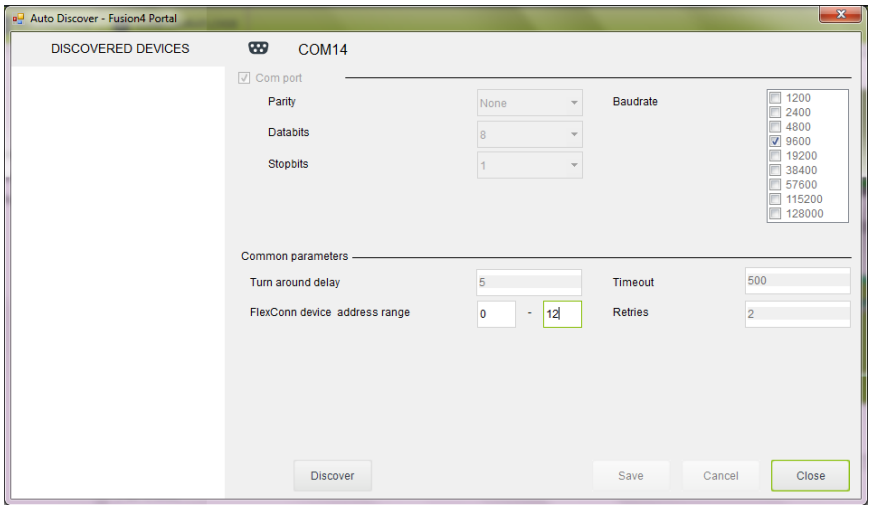
   The site tree is updated with the Fusion 4 devices connected to the IP ports.

7.2.2 Discovering devices connected to COM ports

You can automatically discover the devices connected to COM ports.

1. Start Fusion4 Portal.
2. In the site tree, right-click the COM port name, and then click Auto Discover.

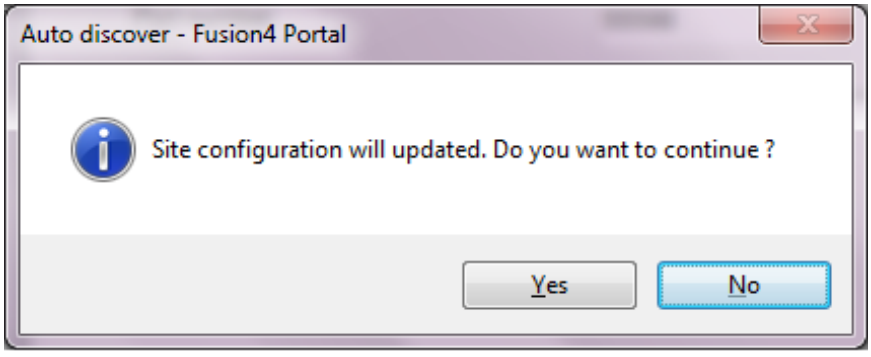
   The Auto Discover window is displayed with values of the selected COM ports.



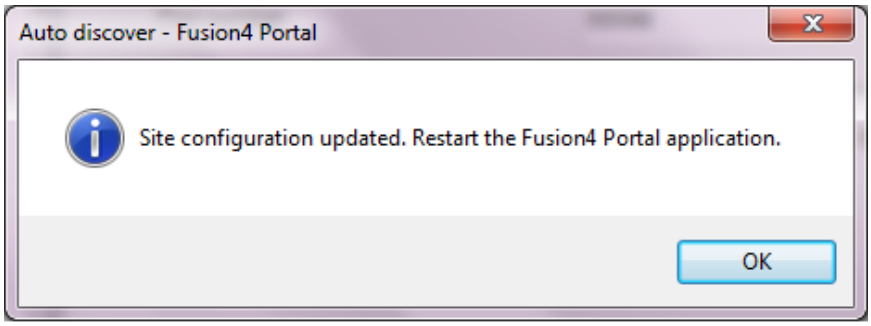
3. In the FlexConn device address range boxes, type the range of the device addresses. The range is based on the number of devices connected to the port address.
4. Click Discover.

   All the Fusion4 devices are discovered and are displayed under DISCOVERED DEVICES on the left pane. A message is displayed indicating that the auto discover is complete.
5. Click OK.
6. Click Save to save the discovered devices connected through the COM ports.

   The following message is displayed.



7. Click Yes. The COM port configuration is updated and the following message is displayed.



8. Restart the Fusion4 Portal application.

   The site tree is updated with the Fusion4 devices connected to the COM ports.

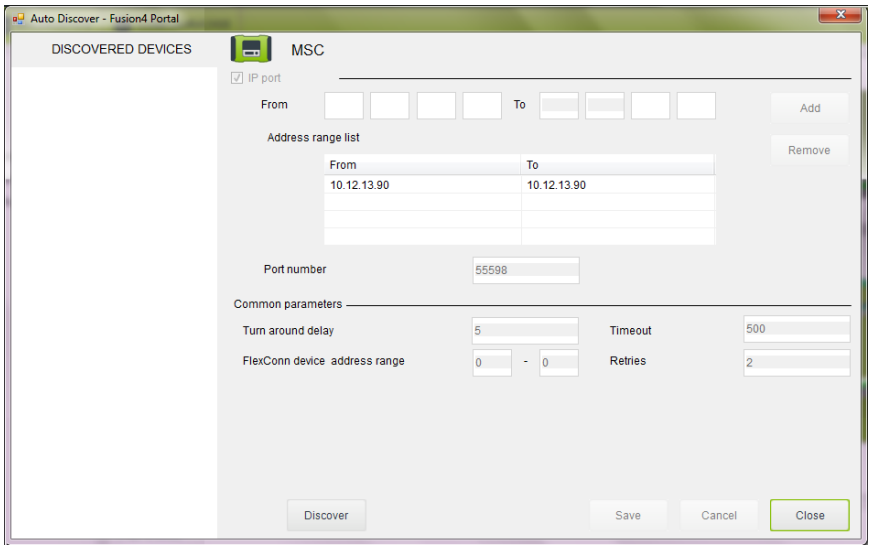
7.3 Discovering device boards

You can automatically discover devices when any new boards are added to the device or any changes are made in the device license.

7.3.1 Discovering device boards connected to IP ports

1. Start Fusion4 Portal.
2. In the site tree, right-click the device name, and then click Auto Discover.

   The Auto Discover window is displayed.

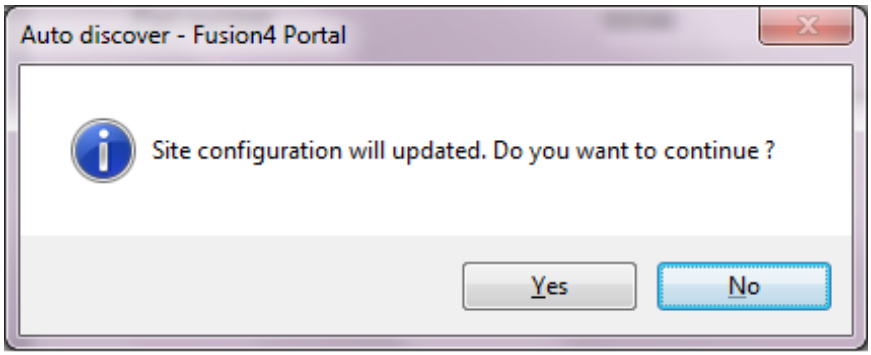


3. Click Discover.

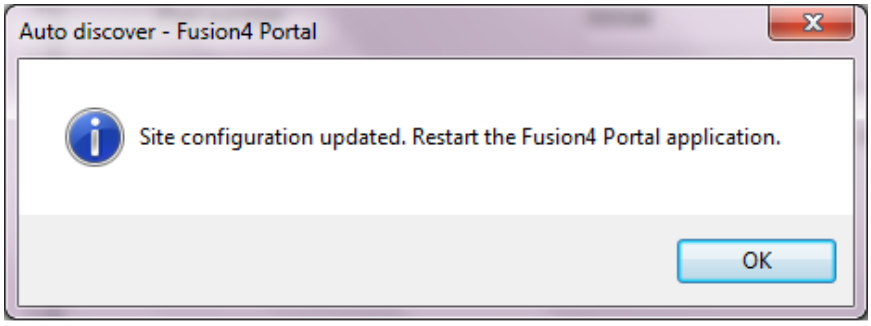
All the Fusion4 devices are discovered and are displayed under DISCOVERED DEVICES on the left pane. A message is displayed indicating that the auto discover is complete.

4. Click OK.
5. Click Save to save the devices connected through the IP ports.

   The following message is displayed.



6. Click Yes. The site configuration is updated and the following message is displayed.



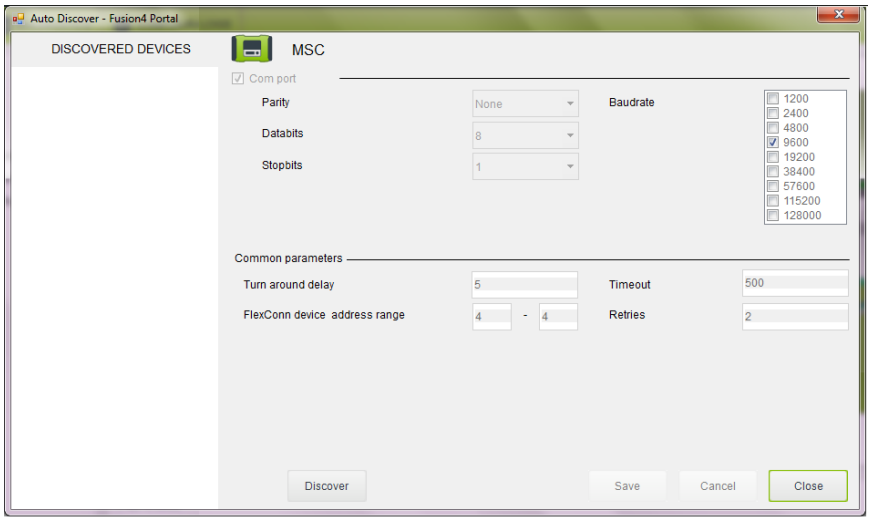
7. Restart the Fusion4 Portal application.

   The site tree is updated with the Fusion4 devices connected to the IP ports.

7.3.2 Discovering device boards connected to COM ports

1. Start Fusion4 Portal.
2. In the site tree, right-click the device name, and then click Auto Discover.

   The Auto Discover window is displayed.



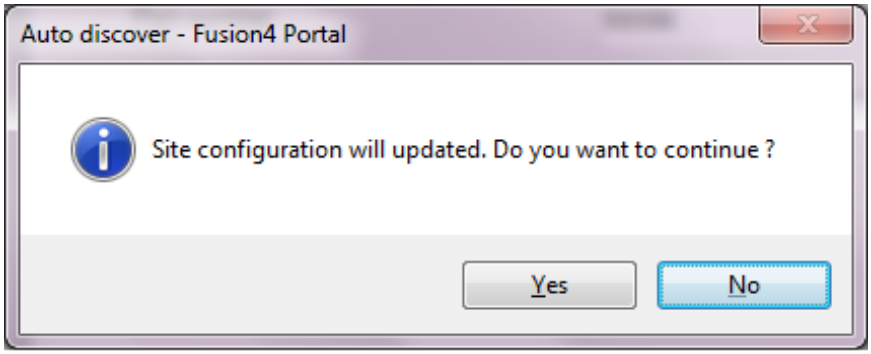
3. Click Discover.

   All the Fusion4 devices are discovered and are displayed under DISCOVERED DEVICES on the left pane. A message is displayed indicating that the auto discover is complete.

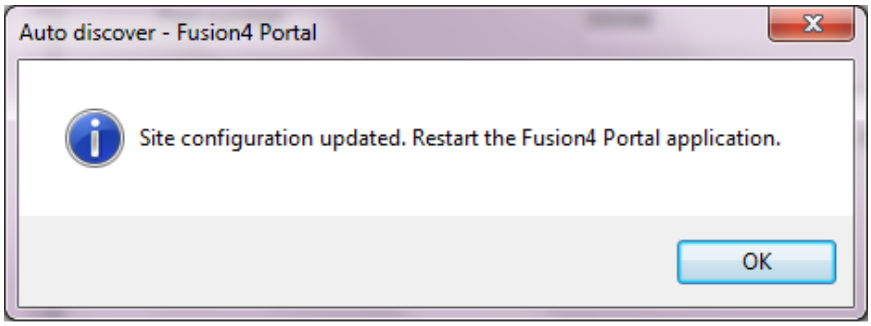
4. Click OK.

5. Click Save to save the devices connected through the COM ports.

   The following message is displayed.



6. Click Yes. The COM port configuration is updated and the following message is displayed.



7. Restart the Fusion4 Portal.

   The site tree is updated with the Fusion4 devices connected to the COM ports.

8 Portal Settings

> CAUTION:
>
> - The configuration of Fusion4 Portal should be carried out by a user with Supervisor or Engineer privileges or by F4PAdministrators.
> - Operators who are logged in are allowed to start Fusion4 Portal and have read-only access, i.e. they can read the various parameters but do not have the rights to change them.

Fusion4 Portal enables you to:

- Create, configure and maintain COM ports to connect Fusion4 Portals, SSC-As, SSC-Bs, MSC-As, and MSC-Ls (Refer to Section 8.1: Creating, Configuring and Maintaining COM Ports).
- Create, configure and maintain IP ports to connect MSC-As and MSC-Ls (Refer to Section 8.2: Creating and Maintaining an Ethernet Port).
- Create and maintain loading bays to group 1010CBs, SSC-As, SSC-Bs, MSC-As, and MSC-Ls (Refer to Section 8.3: Creating and Maintaining a Loading Bay).
- Create, configure and maintain 1010CBs (Refer to Section 8.4: Creating, Configuring and Maintaining a 1010CB).
- Create, configure and maintain SSC-As (Refer to Section 8.5: Creating, Configuring and Maintaining SSC-A).
- Create, configure and maintain SSC-Bs (see Section 8.6: Creating, Configuring and Maintaining SSC-B).
- Create, configure and maintain MSC-As (see Section 8.7: Creating, Configuring and Maintaining MSC-A).
- Create, configure and maintain MSC-Ls (see Section 8.8: Creating, Configuring and Maintaining MSC-L)

8.1 Creating, Configuring and Maintaining COM Ports

After a site is created, you can create one or more COM ports (serial ports) in this site.

NOTES:

1. You can connect the following devices to a COM port via a loading bay:
   - 1010CBs
   - SSC-As
   - SSC-Bs
   - MSC-As
   - MSC-Ls
2. The communication protocol used by the 1010CB for communications through serial port differs from the communication protocol used by the SSC-A, SSC-B, MSC-A, and MSC-L. Therefore, 1010CBs should not be linked to the same COM port as SSC-As, SSC-Bs, MSC-As, and MSC-Ls.

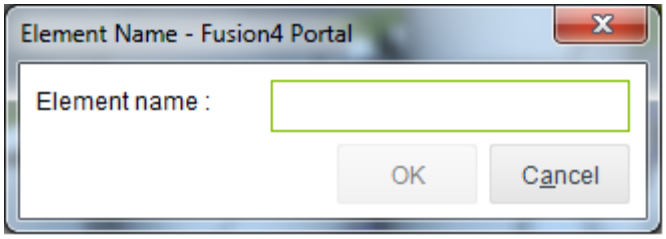
8.1.1 Creating a COM Port

To create a COM port, perform the following steps:

1. In the site tree, select the site for which you want to create a COM port.
2. From the Edit menu, select Create Com Port.

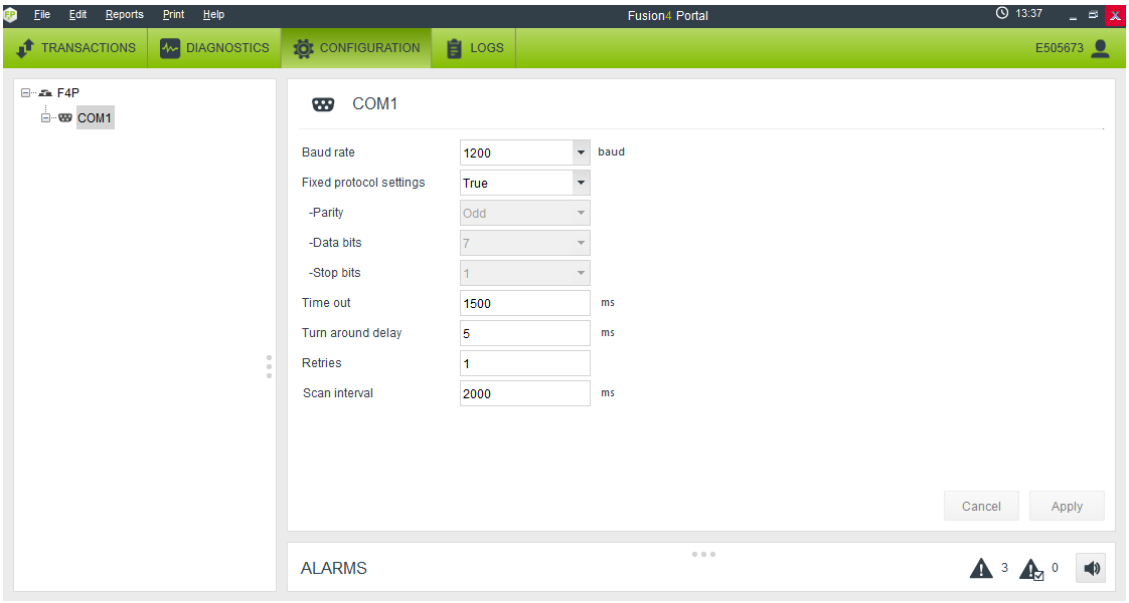
   NOTE: You can also right-click the name of the site in the site tree, and then select Create Com Port.

   The Element name window is displayed.



3. Select the number of the COM port (COM1 - COM255) i.e. the communication port that is used to connect one or more devices, and then click OK.

   The COM port is created.



4. Enter the properties of the COM port. The properties are described in the following table.

> CAUTION: The properties you enter, have to match the settings of the connected devices.

Table 8-1: Description of COM port properties (Including preferred settings)

Com Port Property	Description
Baud Rate	This property indicates the baud rate of the selected communication port. The available options are 300, 600, 1200, 2400, 4800, 9600, 19200, 38400, 57600, and 115200. • Select the appropriate baud if COM port is used for connecting Fusion4 devices (SSC-As, SSC-Bs, MSC-As, and MSC-Ls). • Select 9600 baud or higher if COM port is used for connecting 1010CB devices.
Fixed Protocol Settings	This property can be used to select fixed communication settings like fixed parity or fixed data bits. If fixed protocol settings are true, you cannot overrule the parity, data bits, and stop bits properties. Select False if you want to configure the parity, data bits, and stop bits properties.
Parity	This property indicates the parity of the selected communication port. The available options are None, Odd, and Even.
Data Bits	This property indicates the number of data bits of the selected communication port. The available options are 7 and 8.
Stop Bits	This property indicates the number of stop bits of the selected communication port. The available options are 1 and 2.

Com Port Property	Description
Time Out	This property indicates the time out of serial communication. This time out is the time between request and reply and is used for the field connection. • Enter 300 if the COM port is used to connect a 1010CB. • Enter 500 if the COM port is used to connect an SSC-A, SSC-B, MSC-A, or MSC-L.
Turn Around Delay	This property indicates the delay of serial communication. This delay is the time between reply and request of the next message, and is used for the field connection. • Enter 300 / x ms, where x = the number of devices on the serial line, if the IP port is used to connect a 1010CB. • Enter 0 if the IP port is used to connect an SSC-A, SSC-B, MSC-A, or MSC-L.
Retries	This property indicates the number of retries in case of communication failure. • Enter 3 if the COM port is used to connect a 1010CB. • Enter 0 if the COM port is used to connect an SSC-A, SSC-B, MSC-A, or MSC-L.
Scan interval	This property indicates the interval at which each device is scanned for status change (New alarm or new transactions). • Enter 500 in non-multidrop setup • Enter 2000 in multidrop setup NOTE: This value makes sure that the alarms are reported from each device within 5 seconds. Decrease the value if faster update is required. Please note: Each device in the multidrop line needs to be allocated 400 to 500 ms per scan cycle, for proper scanning. Unless the number of devices in a multidrop line is less than 5, it does not help if the scan interval is reduced.

> NOTE: The settings that you configure in the Fusion4 Portal must match the device setting to establish communication with the device.

5. Click Apply to save the settings.

8.1.2 Changing the Value of COM Port Properties

To change the value of one or more properties of a COM port, perform the following steps:

1. In the site tree, select the COM port for which you want to change the value of one or more properties.

   The properties of the selected COM port are displayed.

2. Change the value of the property or properties.
3. Click Apply to save the changes.

8.1.3 Changing a COM Port

To change a COM port, perform the following steps:

1. In the site tree, select the COM port you want to change.

   The name of the selected COM port is highlighted.

2. From the Edit menu, select Rename.

   The Element name window is displayed.

   > NOTE: You can also right-click the name of the COM port in the site tree, and then select Rename.

3. Select a different COM port.
4. Click OK.

8.1.4 Deleting a COM Port

> NOTE: If a COM port has one or more loading bays linked to it, you first have to delete these loading bays before you can delete the COM port.

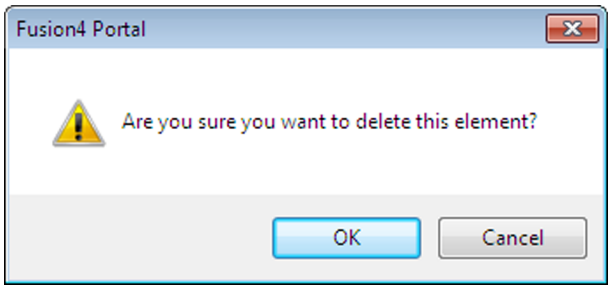
To delete a COM port from a site, perform the following steps:

1. In the site tree, select the COM port you want to delete.

   The name of the COM port is highlighted.

2. From the Edit menu, select Delete.

   The following message is displayed:



3. Click OK if you want to delete the COM port. Otherwise, click Cancel.

   The COM port is deleted from the site.

> NOTE: You can also right-click the name of the COM port in the site tree, and then select Delete.

8.2 Creating and Maintaining an Ethernet Port

When you created a site, you can create one or more Ethernet ports (IP ports) in this site.

NOTE: The following devices can be connected to an IP port (via a loading bay):

- MSC-As
- MSC-Ls

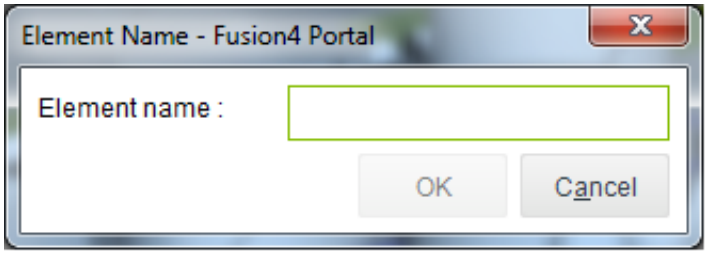
8.2.1 Creating an IP Port

To create an IP port, perform the following steps:

1. In the site tree, select the site for which you want to create an IP port.
2. From the Edit menu, select Create IP Port.

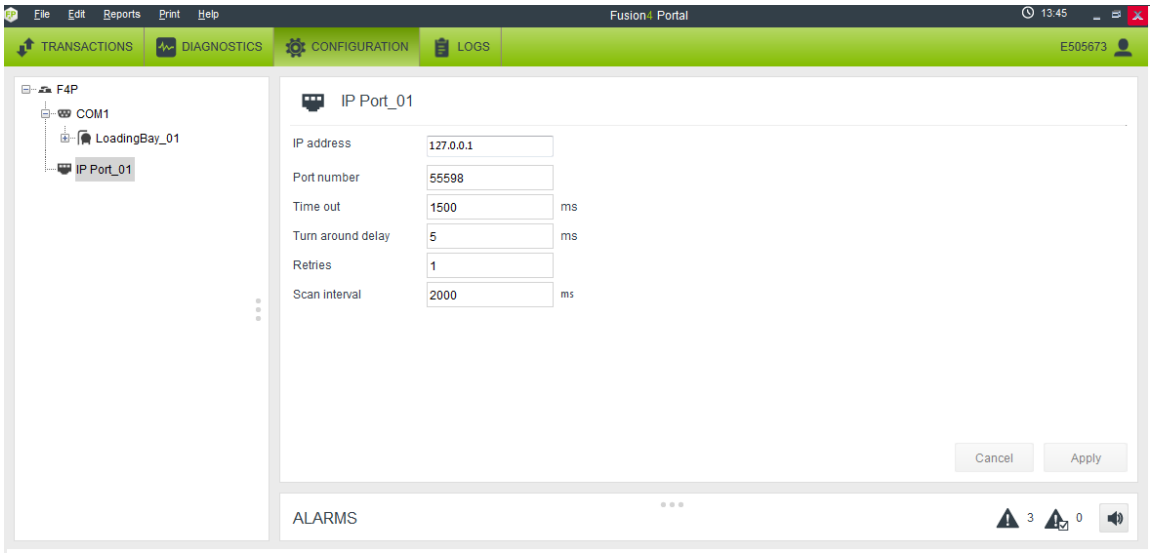
   NOTE: You can also right-click the name of the site in the site tree, and then select Create IP Port.

   The Element name window is displayed.



3. Enter the name of the IP port that is used to connect one or more devices, and then click OK.

   The IP port is created.



4. Enter the values for each property of the IP port. The properties are described in the following table.

> CAUTION: The values you enter, have to match the settings of the connected devices.

Table 8-2: Description of IP port properties (Including preferred settings)

IP Port Property	Description
IP address	This property indicates the IP address of the connected device.
Port number	This property indicates the port configured in the connected device for communicating with Fusion4 Portal.
Time out	This property indicates the time out of ethernet communication. This time out is the time between request and reply and is used for the field connection. • Enter 500

IP Port Property	Description
Turn Around Delay	This property indicates the delay that Fusion4 Portal waits between two consecutive requests to the device. • Enter 0 NOTE: Keep the turn around delay as small as possible, unless there is a specific limitation documented in the device manual about its ability to respond to messages fast.
Retries	This property indicates the number of retries in case of communication failure. • Enter 0 NOTE: If the line is noisy, increase the number of retries. Please note: Increasing the number of retries indicates that Fusion4 Portal spends longer time on a single device, while ignoring the other devices in the same line.
Scan interval	This property indicates the interval at which each device is scanned for statu1s change (New alarm or new transactions). • Enter 500 in non-multidrop setup • Enter 2000 in multidrop setup NOTE: This value makes sure that the alarms are reported from each device within 5 seconds. Decrease the value if faster update is required. Please note: Each device in the multidrop line needs to be allocated 400 to 500 ms per scan cycle, for proper scanning. Unless the number of devices in a multidrop line is less than 5, it does not help if the scan interval is reduced.

IP Port Property	Description
Scan interval	This property indicates the interval at which each device is scanned for statu1s change (New alarm or new transactions). • Enter 500 in non-multidrop setup • Enter 2000 in multidrop setup NOTE: This value makes sure that the alarms are reported from each device within 5 seconds. Decrease the value if faster update is required. Please note: Each device in the multidrop line needs to be allocated 400 to 500 ms per scan cycle, for proper scanning. Unless the number of devices in a multidrop line is less than 5, it does not help if the scan interval is reduced.

5. Click Apply to save the settings.

8.2.2 Changing the Value of IP Port Properties

To change the value of one or more properties of an IP port, perform the following steps:

1. In the site tree, select the IP port for which you want to change the value of one or more properties.

   The properties of the selected IP port are displayed.

2. Change the value of the property or properties.
3. Click Apply to save the changes.

8.2.3 Renaming an IP Port

To rename an IP port, perform the following steps:

1. In the site tree, select the IP port you want to rename.

   The name of the selected IP port is highlighted.

2. From the Edit menu, select Rename.

The Element name window is displayed.

> NOTE: You can also right-click the name of the IP port in the site tree, and then select Rename.

3. Enter the new name of the IP port.
4. Click OK.

8.2.4 Deleting an IP Port

> NOTE: If an IP port has one or more loading bays linked to it, you first have to delete these loading bays before you can delete the IP port.

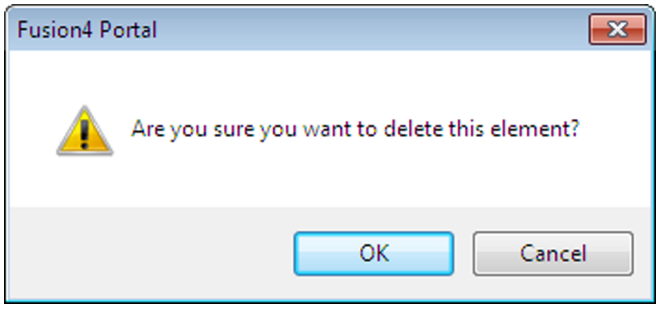
To delete an IP port from a site, perform the following steps:

1. In the site tree, select the IP port you want to delete.

   The name of the IP port is highlighted.

2. From the Edit menu, select Delete.

   The following message is displayed:



3. Click OK if you want to delete the IP Port. Otherwise, click Cancel.

   The IP port is deleted from the site.

> NOTE: You can also right-click the name of the IP port in the site tree, and then select Delete.

8.3 Creating and Maintaining a Loading Bay

When you created a COM port or an IP port, you can create one or more loading bays for this COM port or IP port. A loading bay enables you to group devices.

8.3.1 Creating a Loading Bay

To create a loading bay, perform the following steps:

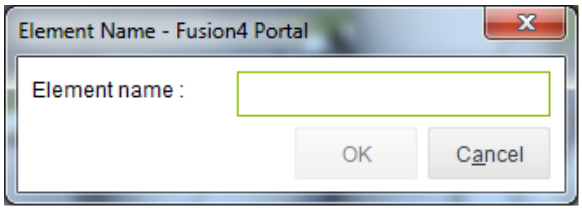
1. In the site tree, select the COM port or IP port for which you want to create a loading bay.

   The name of the selected COM port or IP port is highlighted.

2. From the Edit menu, select Create Loading Bay.

   The Element name window is displayed.

   > NOTE: You can also right-click the name of the COM port or IP port in the site tree, and then select Create Loading Bay.

   > NOTE: Ensure that you do not enter a "." in the Element name box.

3. Enter the name of the loading bay and then click OK.

The loading bay is created and displayed in the site tree.

8.3.2 Renaming a Loading Bay

To rename a loading bay, perform the following steps:

1. In the site tree, select the loading bay you want to rename.

   The name of the selected loading bay is highlighted.

2. From the Edit menu, select Rename.

   The Element name window is displayed.

   > NOTE: You can also right-click the name of the loading bay in the site tree, and then select Rename....

3. Enter the new name of the loading bay and then click OK.

   The loading bay is renamed.

8.3.3 Deleting a Loading Bay

> NOTE: If a loading bay has one or more devices linked to it, you first have to delete these devices before you can delete the loading bay.

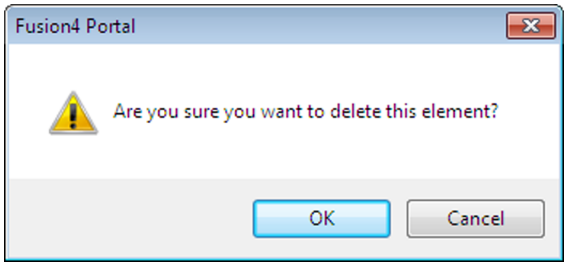
To delete a loading bay from a com port or an IP port, perform the following steps:

1. In the site tree, select the loading bay you want to delete.

   The name of the selected loading bay is highlighted.

2. From the Edit menu, select Delete.

   The following message is displayed:



3. Click OK if you want to delete the loading bay. Otherwise, click Cancel.

   The loading bay is deleted from the COM port.

> NOTE: You can also right-click the name of the loading bay in the site tree, and then select Delete.

8.4 Creating, Configuring and Maintaining a 1010CB

After you create a loading bay, you can create one or more 1010CBs for this loading bay.

8.4.1 Creating a 1010CB

To create a 1010CB, perform the following steps:

1. In the site tree, select the loading bay for which you want to create a 1010CB.

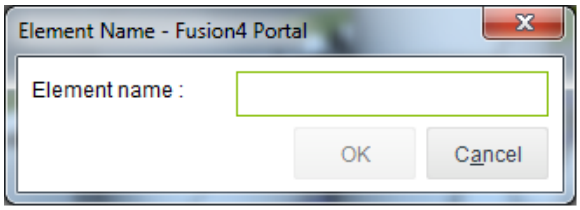
   The name of the loading bay is highlighted.

> NOTE: The 1010CB protocol differs from the protocol for Single stream controllers and Multi-stream controllers. Therefore, a 1010CB should not be linked to the same loading bay (COM port) as Single stream controllers and Multi-stream controllers.

2. From the Edit menu, select Create 1010CB.

   The Element name window is displayed.

> NOTE: You can also right-click the name of the loading bay in the site tree, and then select Create 1010CB.

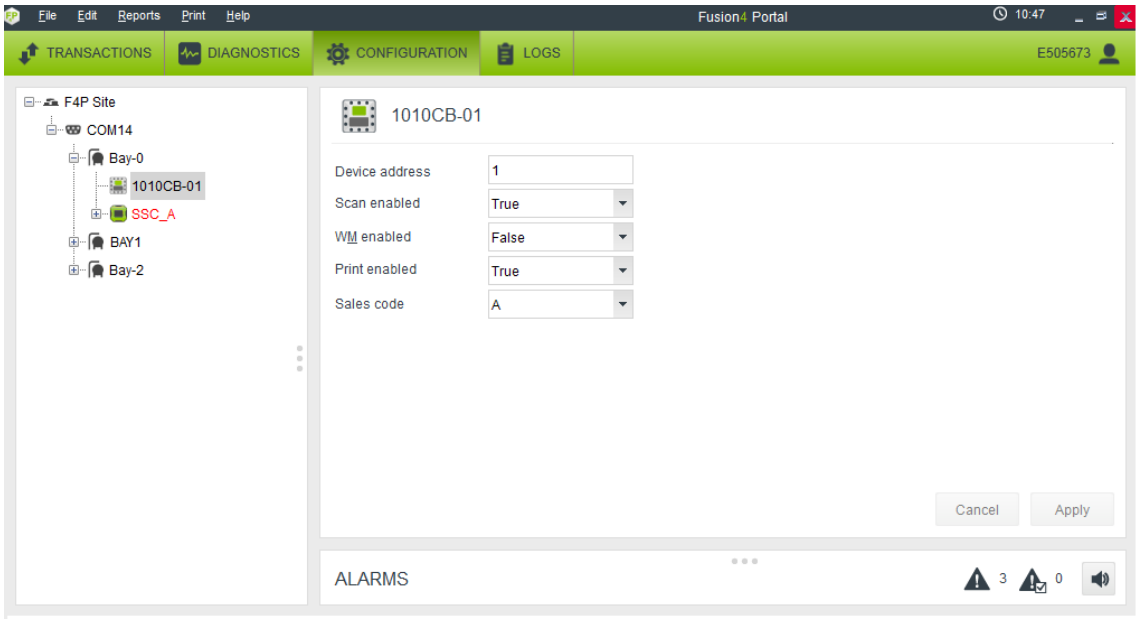


> NOTE: Ensure that you do not enter a "." in the Element name box.

3. Enter the name of the 1010CB and then click OK.

> NOTE: If the 1010CB is used in a swing arm configuration, i.e. the device is used across two loading bays, the names should indicate this. For example 'SWING1', 'SWING2'.

   The 1010CB is created.



4. Enter the properties of the 1010CB. The properties are described in the following table.

Table 8-3: Description of 1010CB properties

Property	Description
Device address	The communication address of the 1010CB (1 ... 31).
Scan enabled	• Select True to enable the scan function (communication with this device is allowed). • Select False to disable the scan function (communication with this device is not allowed).
W&M enabled	• Select True if Weights & Measures (W&M) is enabled (the 1010CB is W&M compliant). • Select False if Weights & Measures (W&M) is not enabled (the 1010CB is not W&M compliant). NOTE: In a W&M compliant system, you always select True, except when the 1010CB concerned is non-W&M compliant.

Property	Description
Print Enabled	• Select True to enable the print transaction function. When the print transaction function is enabled, the transactions of the connected 1010CB are printed immediately and automatically resulting in a Bill of Lading. NOTE: On the Site Properties tab the printing options for BoL (Bill of Lading) have to be set to 'Print to printer' or to 'Print to file'. See Section 6.2.1: Printing reports to file for more information. • Select False to disable the print transaction function. NOTE: Regardless of whether you selected True or False, you can always print the transactions of the connected 1010CB using the Print BoL application.

Property	Description
Sales Code	The maximum number of external OPC clients which can be connected to the OPC server concurrently is determined by the customer order and reflected in the sales code. • A = One arm loading • B = One arm loading with ratio blending • C = One arm loading with side stream blending • D = Two arm loading • E = Two arm loading: one straight loading, one with ratio blending • F = Two arm loading: one straight loading, one with side stream Blending • G = Two arm loading each with ratio blending • H = Two arm loading each with side stream blending • J = Four arm loading NOTE: The selected sales code must match the sales code of the connected device.

NOTE: When there is no communication with a device (e.g. the device is not active or there is a problem with the device), disable the scan function for this device.

5. Click Apply to save the properties.

8.4.2 Changing the Value of 1010CB Properties

To change the value of one or more properties of a 1010CB, perform the following steps:

1. In the site tree, select the 1010CB for which you want to change the value of one or more properties.

The name of the 1010CB is highlighted. The properties of the selected 1010CB are displayed.

2. Change the value of the property or properties.
3. Click Apply to save the changes.

8.4.3 Renaming a 1010CB

To rename a 1010CB, perform the following steps:

1. In the site tree, select the 1010CB you want to rename.

   The name of the 1010CB is highlighted.

2. From the Edit menu, select Rename.

   The Element name window is displayed.

   > NOTE: You can also right-click the name of the 1010CB in the site tree, and then select Rename from the menu.

3. Enter the new name of the 1010CB and then click OK.

   The 1010CB is renamed.

8.4.4 Deleting a 1010CB

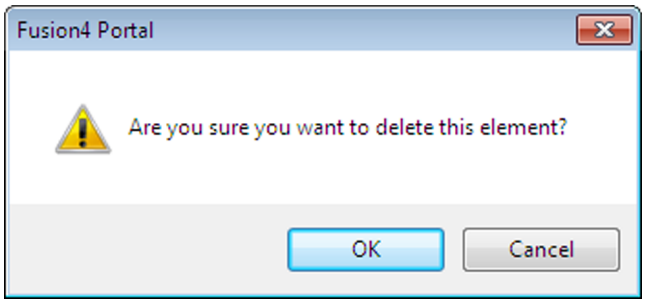
To delete a 1010CB from a loading bay, perform the following steps:

1. In the site tree, select the 1010CB you want to delete.

   The name of the 1010CB is highlighted.

2. From the Edit menu, select Delete.

   The following message is displayed:



3. Click OK if you want to delete the 1010CB. Otherwise, click Cancel.

   The 1010CB is deleted from the loading bay.

> NOTE: You can also right-click the name of the 1010CB in the site tree, and then select Delete from the menu.

8.5 Creating, Configuring and Maintaining SSC-A

When you automatically discover the site, the devices configured for the site are automatically displayed in the site tree panel. However, you can also manually configure SSC-A devices, if required.

> NOTE: If you manually configure the devices, you must automatically discover the devices to use the live viewer, configuration, and diagnostics features.

8.5.1 Creating SSC-A

To create an SSC-A, perform the following steps:

1. In the site tree, select the loading bay for which you want to create an SSC-A.

   The name of the loading bay is highlighted.

> NOTE: The communication protocol used by the SSC-A for communications through serial port differs from the communication protocol used by the

> 010CB. Therefore, SSC-As should not be linked to the same loading bay as 010CBs.

2. From the Edit menu, select Create SSC Additive.

   The Element name window is displayed.

> NOTES:
>
> - You can also right-click the name of the loading bay in the site tree, and then select Create SSC Additive.
> - Ensure that you do not enter a "." in the Element name box.

3. Enter the name of the SSC-A and then click OK.

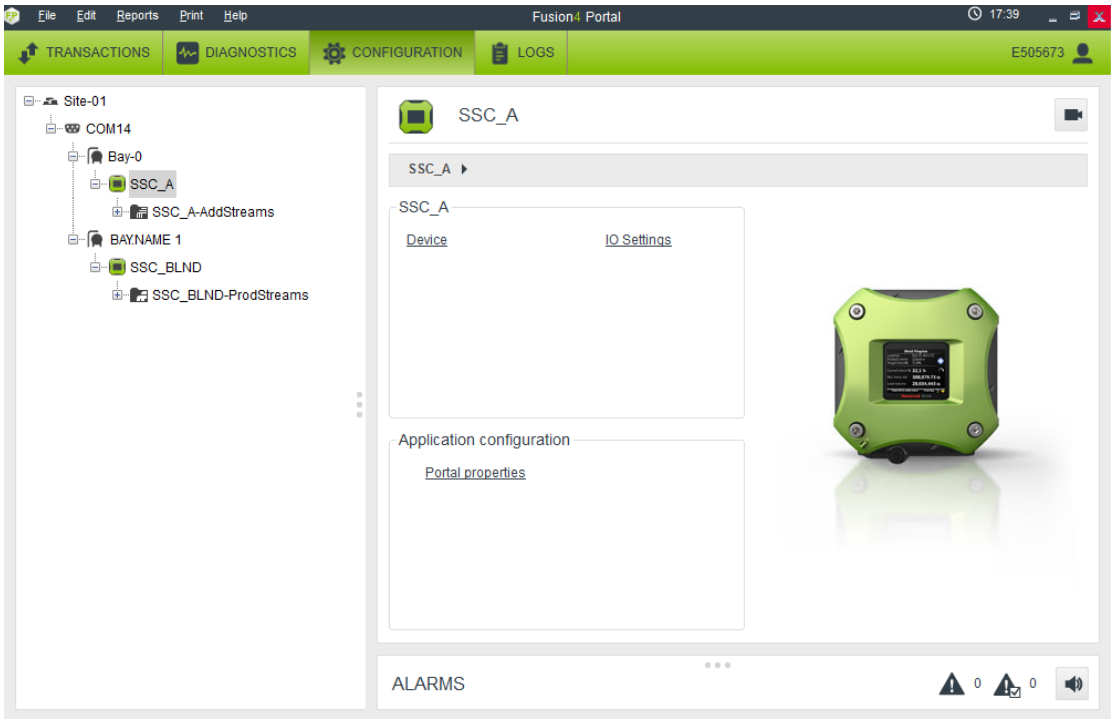
   The SSC-A is created

8.5.2 Changing the Value of SSC-A Properties

To change the value of one or more properties of an SSC-A, perform the following steps:

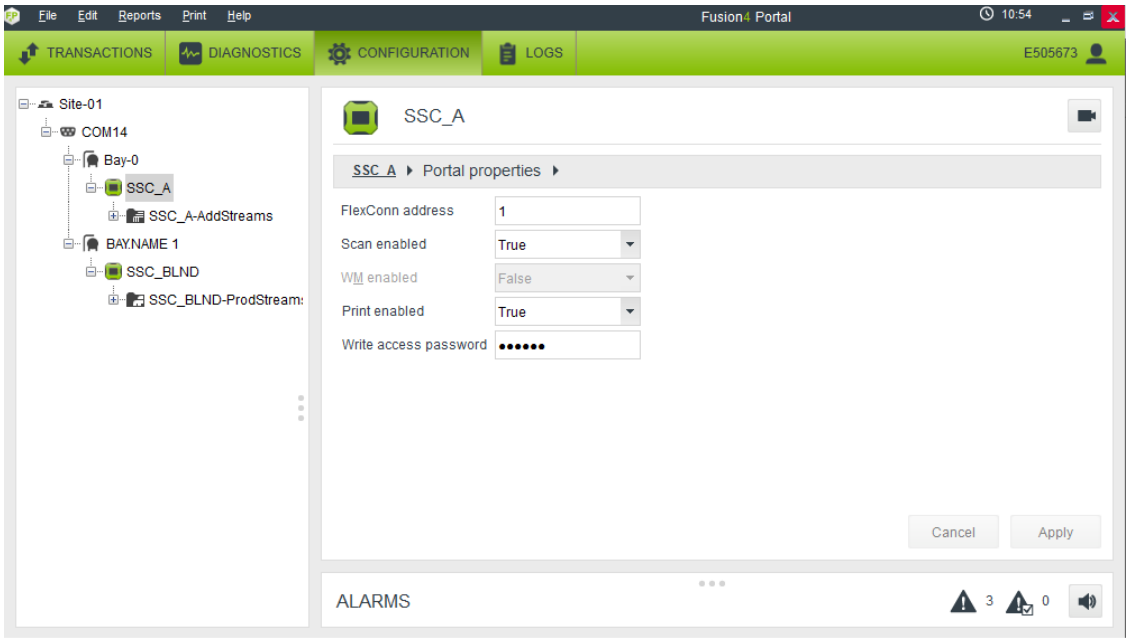
1. In the site tree, select the SSC-A for which you want to change the value of one or more properties.

   The name of the SSC-A is highlighted.



2. Under Application Configuration, click Portal Properties.

   The Portal Properties window is displayed.



3. Enter the properties of the SSC-A. The properties are described in the following table.

Table 8-4: Description of SSC-A properties

Property	Description
FlexConn address	The communication address of the SSC-A (0 - 1899).
Scan enabled	• Select True to enable the scan function (communication with this device is allowed). • Select False to disable the scan function (communication with this device is not allowed).
WM enabled	Additive transactions need not be W&M compliant. Therefore, the default value is 'False'. You cannot change this value.
Print enabled	• Select True to enable the print transaction function. When the print transaction function is enabled, the transactions of the connected SSC-As are buffered and printed automatically when one print page is full. NOTE: On the Site Properties tab the printing options for Transaction summary have to be set to 'Print to printer' or to 'Print to file'. See Table 6-3: Description of Report Settings for more information. • Select False to disable the print transaction function. NOTE: Regardless of whether you selected True or False, you can always print the transactions of the connected SSC-A using the Print BoL application.
Write access password	Indicates the password required to update the write-protected entities/parameters of the device. NOTE: The password of the device interface must match the value specified in this field.

NOTE: When there is no communication with a device (e.g. the device is not active or there is a problem with the device), disable the scan function for this device.

4. Click Apply to save the changes.

   The portal properties for SSC-A are saved.

8.5.3 Renaming an SSC-A

To rename an SSC-A, perform the following steps:

1. In the site tree, select the SSC-A you want to rename.

   The name of the SSC-A is highlighted.

2. From the Edit menu, select Rename.

   The Element name window is displayed.

   > NOTE: You can also right-click the name of the SSC-A in the site tree, and then select Rename from the menu.

3. Enter the new name of the SSC-A and then click OK.

   The SSC-A is renamed.

8.5.4 Deleting an SSC-A

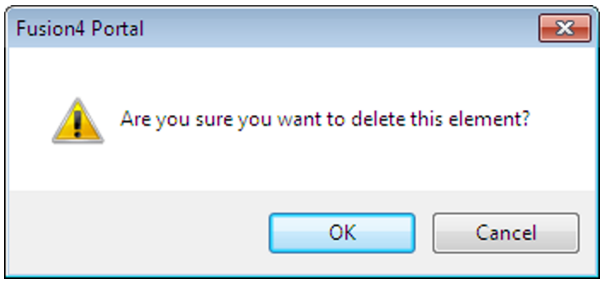
To delete an SSC-A from a loading bay, perform the following steps:

1. In the site tree, select the SSC-A you want to delete.

   The name of the SSC-A is highlighted.

2. From the Edit menu, select Delete.

   The following message is displayed:



3. Click OK if you want to delete the SSC-A. Otherwise, click Cancel.

   The SSC-A is deleted from the loading bay.

> NOTE: You can also right-click the name of the SSC-A in the site tree, and then select Delete from the menu.

8.6 Creating, Configuring and Maintaining SSC-B

When you automatically discover the site, the devices configured for the site are automatically displayed in the site tree panel. However, you can also manually configure SSC-B devices, if required.

> NOTE: If you manually configure the devices, you must automatically discover the devices to use the live viewer, configuration, and diagnostics features.

8.6.1 Creating SSC-B

To create an SSC-B, perform the following steps:

1. In the site tree, select the loading bay for which you want to create an SSC-B.

   The name of the loading bay is highlighted.

   > NOTE: The communication protocol used by the SSC-B for communications through serial port differs from the communication protocol used by the 1010CB. Therefore, SSC-Bs should not be linked to the same loading bay as 1010CBs.

2. From the Edit menu, select Create SSC Blending.

   The Element name window is displayed.

   > NOTE: You can also right-click the name of the loading bay in the site tree, and then select Create SSC Blending.

> Ensure that you do not enter a "." in the Element name box.

3. Enter the name of the SSC-B and then click OK.

   The SSC-B is created.

> NOTE: When there is no communication with a device (e.g. the device is not active or there is a problem with the device), disable the scan function for this device.

4. Click Apply to save the properties.

8.6.2 Changing the Value of SSC-B Properties

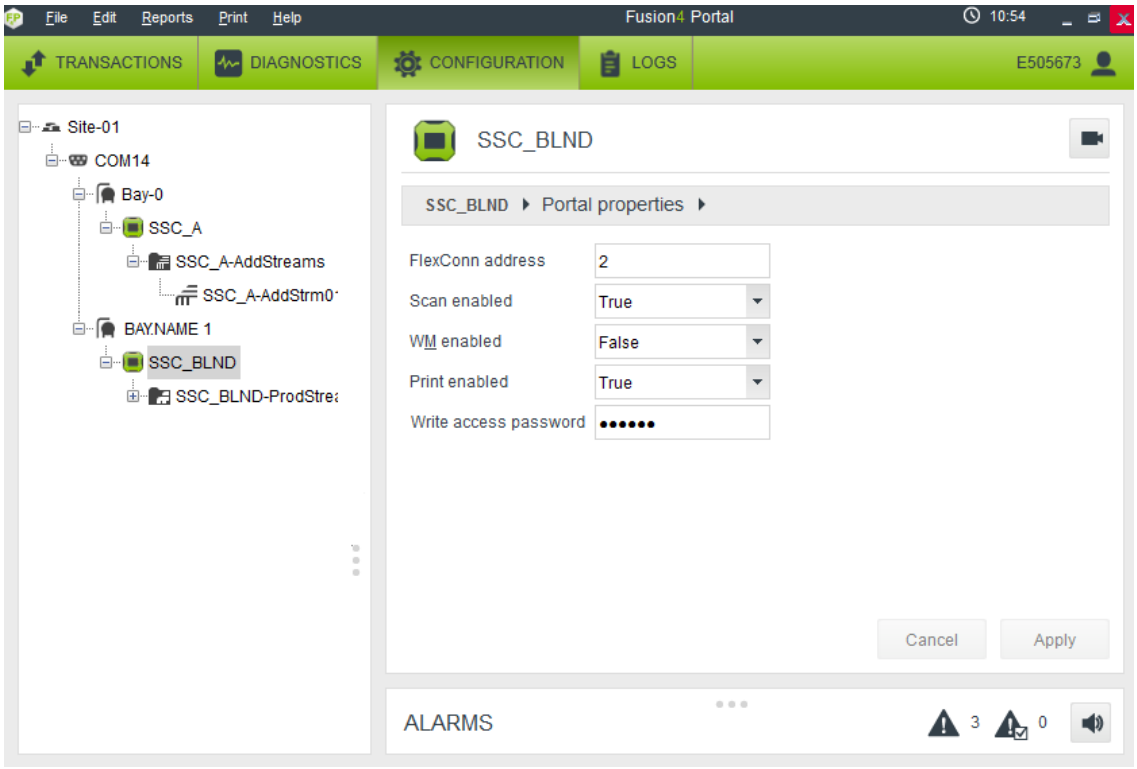
To change the value of one or more properties of an SSC-B, perform the following steps:

1. In the site tree, select the SSC-B for which you want to change the value of one or more properties.

   The name of the SSC-B is highlighted.

2. Under Application Configuration, click Portal Properties.

The Portal Properties window is displayed.



3. Enter the properties of the SSC-B. The properties are described in the following table.

Table 8-5: Description of SSC-B properties

Property	Description
FlexConn address	The communication address of the SSC-B (0 - 1899).
Scan enabled	• Select True to enable the scan function (communication with this device is allowed). • Select False to disable the scan function (communication with this device is not allowed).

Property	Description
WM enabled	• Select True if Weights & Measures (W&M) is enabled (i.e. the SSC-B is W&M compliant). • Select False if Weights & Measures (W&M) is not enabled (i.e. the SSC-B is not W&M compliant). NOTE: In a W&M compliant system you always select True, except when the SSC-B concerned is non-W&M compliant.
Print enabled	• Select True to enable the print transaction function. When the print transaction function is enabled, the transactions of the connected SSC-B are printed immediately and automatically resulting in a Bill of Lading . NOTE: On the Site Properties tab the printing options for BoL (Bill of Lading) have to be set to 'Print to printer' or to 'Print to file'. See Section 6.2.1: Printing reports to file for more information. • Select False to disable the print transaction function. NOTE: Regardless of whether you selected True or False, you can always print the transactions of the connected SSC-B using the Print BoL application.
Write access password	Indicates the password required to update the write-protected entities/parameters of the device. NOTE: The password of the device interface must match the value specified in this field.

> NOTE: When there is no communication with a device (e.g. the device is not active or there is a problem with the device), disable the scan function for this device.

4. Click Apply to save the changes.

   The portal properties forSSC-A are saved.

8.6.3 Renaming an SSC-B

To rename an SSC-B, perform the following steps:

1. In the site tree select the SSC-B you want to rename.

   The name of the SSC-B is highlighted.

2. From the Edit menu, select Rename.

   The Element name window is displayed.

   > NOTE: You can also right-click the name of the SSC-B in the site tree, and then select Rename from the menu.

3. Enter the new name of the SSC-B. Then click OK.

   The SSC-B is renamed.

8.6.4 Deleting an SSC-B

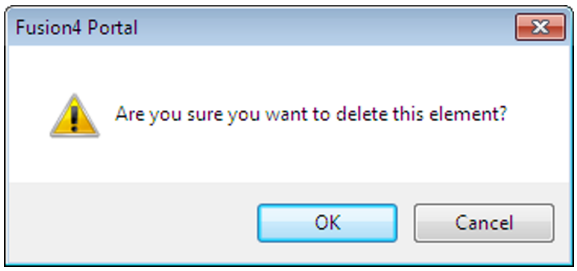
To delete an SSC-B from a loading bay, perform the following steps:

1. In the site tree, select the SSC-B you want to delete.

   The name of the SSC-B is highlighted.

2. From the Edit menu, select Delete.

   The following message is displayed:



3. Click OK if you want to delete the SSC-B. Otherwise, click Cancel.

   The SSC-B is deleted from the loading bay.

> NOTE: You can also right-click the name of the SSC-B in the site tree, and then select Delete from the menu.

8.7 Creating, Configuring and Maintaining MSC-A

When you automatically discover the site, the devices configured for the site are automatically displayed in the site tree panel. However, you can also manually configure MSC-A devices, if required.

> NOTE: If you manually configure the devices, you must automatically discover the devices to use the live viewer, configuration, and diagnostics features.

8.7.1 Creating MSC-A

To create an MSC-A, perform the following steps:

1. In the site tree, select the loading bay for which you want to create an MSC-A.

   The name of the loading bay is highlighted.

   > NOTE: The Multi-stream controller protocol differs from the 1010CB protocol. Therefore, an MSC-A should not be linked to the same loading bay (COM port) as 1010CBs.

2. From the Edit menu, select Create MSC Additive.

The Element name window is displayed.

> NOTE: You can also right-click the name of the loading bay in the site tree, and then select Create MSC Additive.
>
> Ensure that you do not enter a "." in the Element name box.

3. Enter the name of the MSC-A and then click OK.

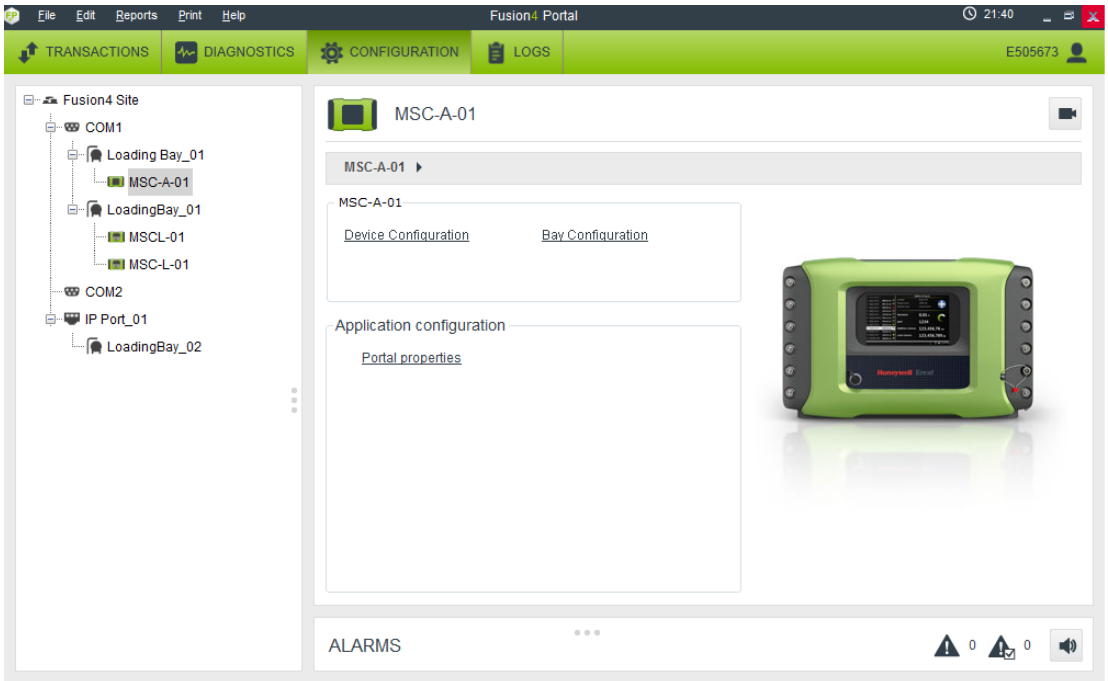
   The MSC-A is created.

8.7.2 Changing the Value of MSC-A Properties

To change the value of one or more properties of an MSC-A, perform the following steps:

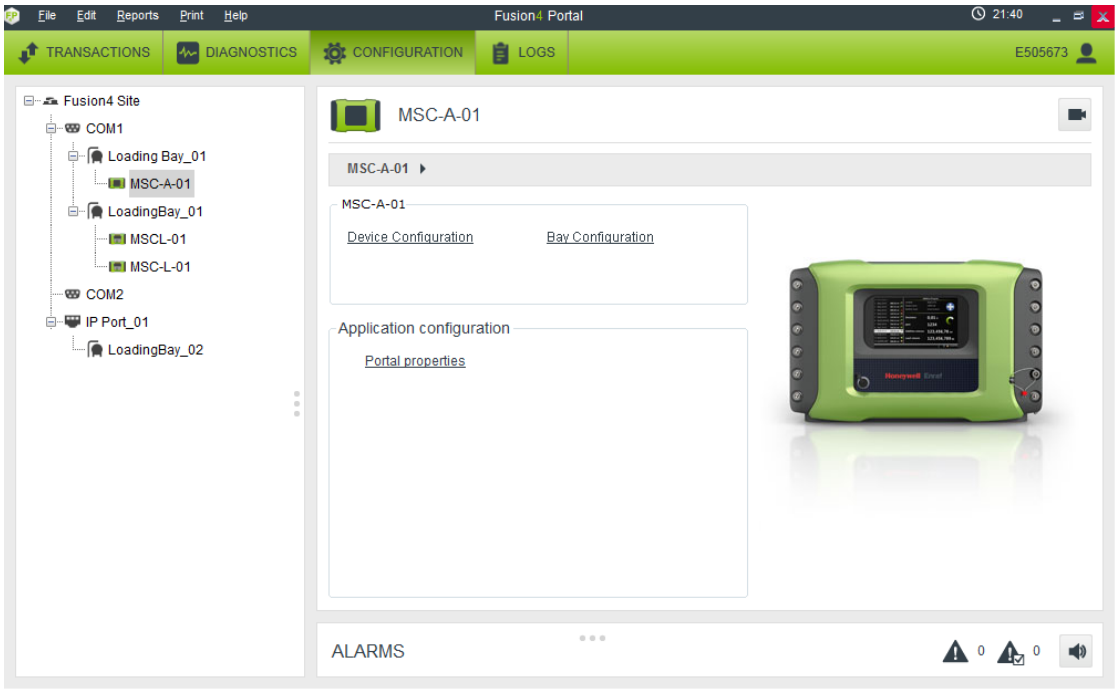
1. In the site tree, select the MSC-A for which you want to change the value of one or more properties.

   The name of the MSC-A is highlighted.



2. Under Application Configuration, click Portal Properties.

   The Portal Properties window is displayed.



3. Enter the properties of the MSC-A.

Table 8-6: Description of MSC-A properties

Property	Description
FlexConn address	The communication address of the MSC-A (0 - 1899).
Scan enabled	• Select True to enable the scan function (communication with this device is allowed). • Select False to disable the scan function (communication with this device is not allowed).
WM enabled	Additive transactions need not be W&M compliant. Therefore, the default value is 'False'. You cannot change this value.

Property	Description
Print enabled	• Select True to enable the print transaction function. When the print transaction function is enabled, the transactions of the connected MSC-A are buffered and printed automatically when one print page is full. NOTE: On the Site Properties tab the printing options for Transaction summary have to be set to 'Print to printer' or to 'Print to file'. See Section 6.2.1: Printing reports to file for more information. • Select False to disable the print transaction function. NOTE: Regardless of whether you selected True or False, you can always print the transactions of the connected MSC-A using the Print BoL application.
Write access password	Indicates the password required to update the write-protected entities/parameters of the device. NOTE: The password of the device interface must match the value specified in this field.

NOTE: When there is no communication with a device (e.g. the device is not active or there is a problem with the device), disable the scan function for this device.

4. Click Apply to save the changes.

   The portal properties for MSC-A is saved.

8.7.3 Renaming an MSC-A

To rename an MSC-A, perform the following steps:

1. In the site tree select the MSC-A you want to rename.

   The name of the MSC-A is highlighted.

2. From the Edit menu, select Rename.

   The Element name window is displayed.

   > NOTE: You can also right-click the name of the MSC-A in the site tree, and then select Rename... from the menu.

3. Enter the new name of the MSC-A and then click OK.

   The MSC-A is renamed.

8.7.4 Deleting an MSC-A

To delete an MSC-A from a loading bay, perform the following steps:

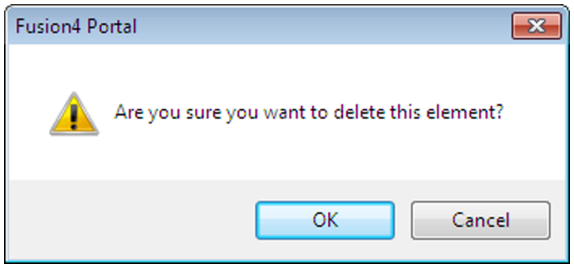
1. In the site tree select the MSC-A you want to delete.

   The name of the MSC-A is highlighted.

2. From the Edit menu, select Delete.

   > NOTE: You can also right-click the name of the MSC-A in the site tree, and then select Delete from the menu.

   The following message is displayed:



3. Click OK if you want to delete the MSC-A. Otherwise, click Cancel.

   The MSC-A is deleted from the loading bay.

8.8 Creating, Configuring and Maintaining MSC-L

When you automatically discover the site, the devices configured for the site are automatically displayed in the site tree panel. However, you can also manually configure MSC-L devices, if required.

> NOTE: If you manually configure the devices, you must automatically discover the devices to use the live viewer, configuration, and diagnostics features.

8.8.1 Creating MSC-L

To create an MSC-L, perform the following steps:

1. In the site tree, select the loading bay for which you want to create an MSC-L.

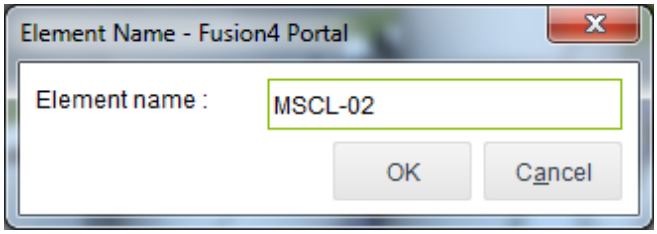
   The name of the loading bay is highlighted.

   > NOTE: The Multi-stream controller protocol differs from the 1010CB protocol. Therefore, an MSC-L should not be linked to the same loading bay (COM port) as 1010CBs.

2. From the Edit menu, select Create MSC Loading.

   The Element name window is displayed.

   > NOTE: You can also right-click the name of the loading bay in the site tree, and then select Create MSC Loading.



> NOTE: Ensure that you do not enter a "." in the Element name box.

3. Enter the name of the MSC-L and then click OK.

   The MSC-L is created.

8.8.2 Changing the Value of MSC-L Properties

To change the value of one or more properties of an MSC-L, perform the following steps:

1. In the site tree, select the MSC-L for which you want to change the value of one or more properties.

   The name of the MSC-L is highlighted.

2. Under Application Configuration, click Portal Properties.

   The Portal Properties window is displayed.

3. Enter the properties of the MSC-L.

Table 8-7: Description of MSC-L properties

Property	Description
FlexConn address	The communication address of the MSC-L (0 - 1899).
Scan enabled	• Select True to enable the scan function (communication with this device is allowed). • Select False to disable the scan function (communication with this device is not allowed).
WM enabled	Loading transactions need not be W&M compliant. Therefore, the default value is 'False'. However, you can change this value to 'True', if required.

Property	Description
Print enabled	• Select True to enable the print transaction function. NOTE: In the Reports tab, the printing options for BOL have to be set to 'Print to printer' or to 'Print to file'. See Table 6-3: Description of Report Settings for more information. • Select False to disable the print transaction function. NOTE: Regardless of whether you selected True or False, you can always print the transactions of the connected MSC-L using the Print BoL application.
Write access password	Indicates the password required to update the write-protected entities/parameters of the device. NOTE: The password of the device interface must match the value specified in this field.

NOTE: When there is no communication with a device (e.g. the device is not active or there is a problem with the device), disable the scan function for this device.

4. Click Apply to save the changes.

   The portal properties for MSC-L is saved.

8.8.3 Renaming an MSC-L

To rename an MSC-L, perform the following steps:

1. In the site tree, select the MSC-L you want to rename.

   The name of the MSC-L is highlighted.

2. From the Edit menu, select Rename.

   The Element name - Fusion4 Portal window is displayed.

   > NOTE: You can also right-click the name of the MSC-L in the site tree, and then select Rename... from the menu.

3. Enter the new name of the MSC-L and then click OK.

   The MSC-L is renamed.

8.8.4 Deleting an MSC-L

To delete an MSC-L from a loading bay, perform the following steps:

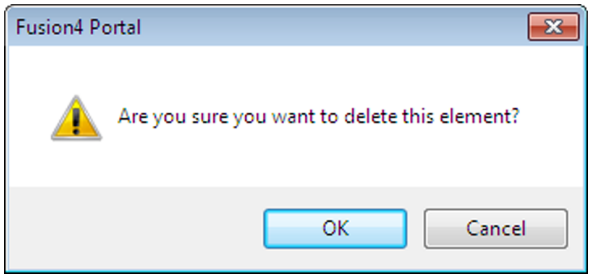
1. In the site tree, select the MSC-L you want to delete.

   The name of the MSC-L is highlighted.

2. From the Edit menu, select Delete.

   > NOTE: You can also right-click the name of the MSC-L in the site tree, and then select Delete from the menu.

   The following message is displayed:



3. Click OK if you want to delete the MSC-L. Otherwise, click Cancel.

   The MSC-L is deleted from the loading bay.

8.9 Restarting the Computer

When you have configured Fusion4 Portal, you have to shutdown and restart the computer.

8.10 Replacing the Logo on the Bill of Lading

You can replace the default with the logo of your company.

> NOTE: The logo used must be a bitmap file (.bmp). You can use, for example, Microsoft Windows Paint to create a new bitmap file. The preferred size of the logo is: 234 pixels (width) x 46 pixels (height) with a resolution of 96 dpi. The name of this bitmap file must be CompanyLogo.bmp.

To replace the logo, perform the following steps:

1. Save the bitmap file containing the logo of your company in the directories that contain the original CompanyLogo.bmp file:

   ...\Program Files\Enraf\Fusion4 Portal\BoL Printer

   ...\Program Files\Enraf\Fusion4 Portal\Monitor

   The original bitmap file is overwritten by the new bitmap file containing the logo of your company.

2. Shut down and restart the computer.

> NOTE: On the BoL printout, the new logo is scaled automatically to let it fit in the reserved area on the BoL.

9 Configure Module

You can remotely configure devices such as SSC-A, SSC-B, MSC-A, and MSC-L using the Fusion4 Portal application. However, you can also configure these settings on the real devices.

The following menu items are available as part of all the device configuration pages.

Fields	Description
Apply Data	Allows you to apply the settings.
Get Data	Allows you to get the current values from the device.
Last read time	Allows you to view the time when the current values from the device were last read.
Undo	Cancel the applied settings.
Live Viewer 	Remotely monitor the current loading details of the device.

NOTE: You can remotely configure devices in the Fusion4 Portal application if these devices are auto discovered (Refer).

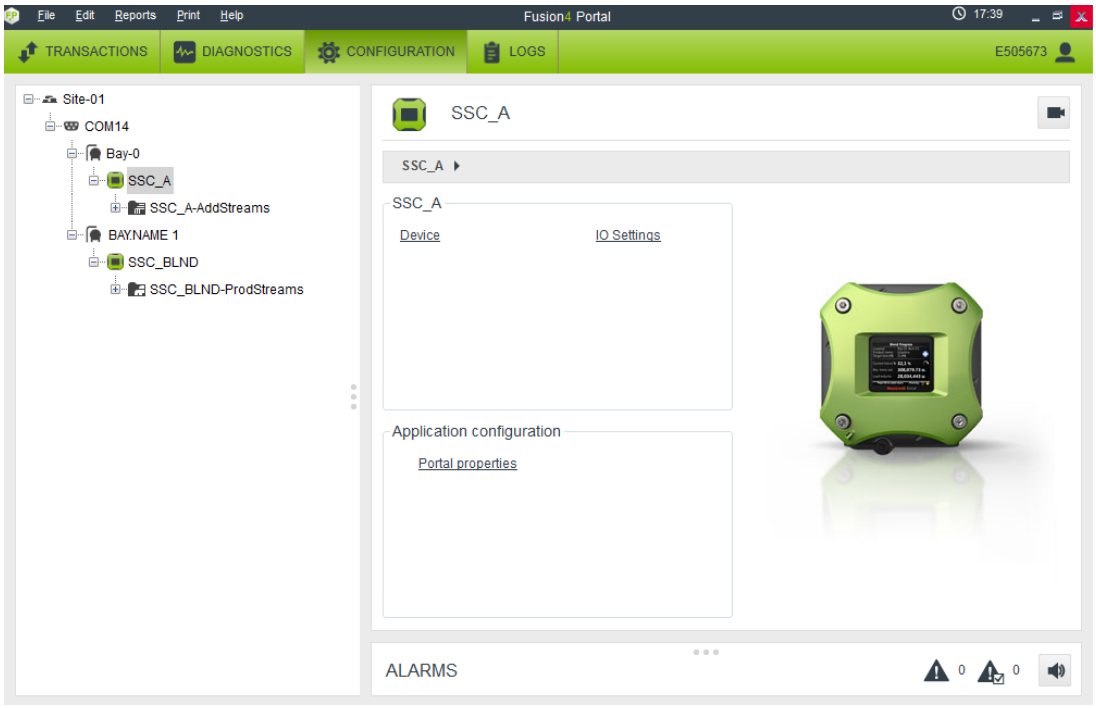
9.1 Configuring SSC-A

You can configure parameters for an SSC-A device and additive streams for the selected SSC-A device.

To configure parameters for an SSC-A device, perform the following steps:

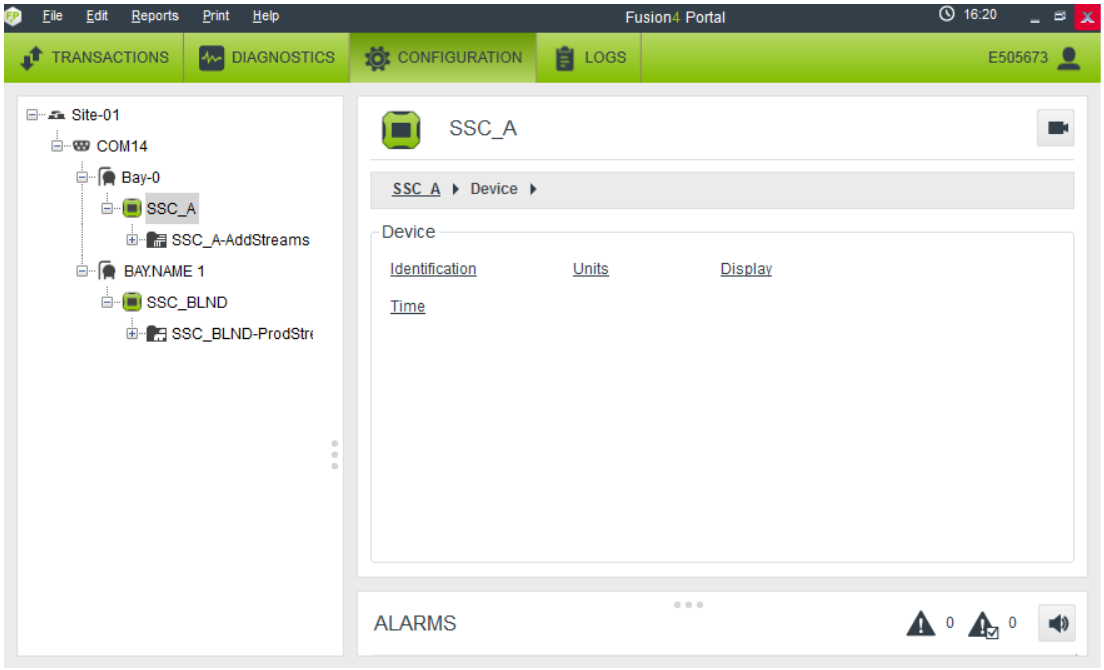
1. In the site tree, select the SSC-A device that you want to configure.
2. From the menu bar, click the CONFIGURATION tab.

   The Configuration window for the selected SSC-A device is displayed.



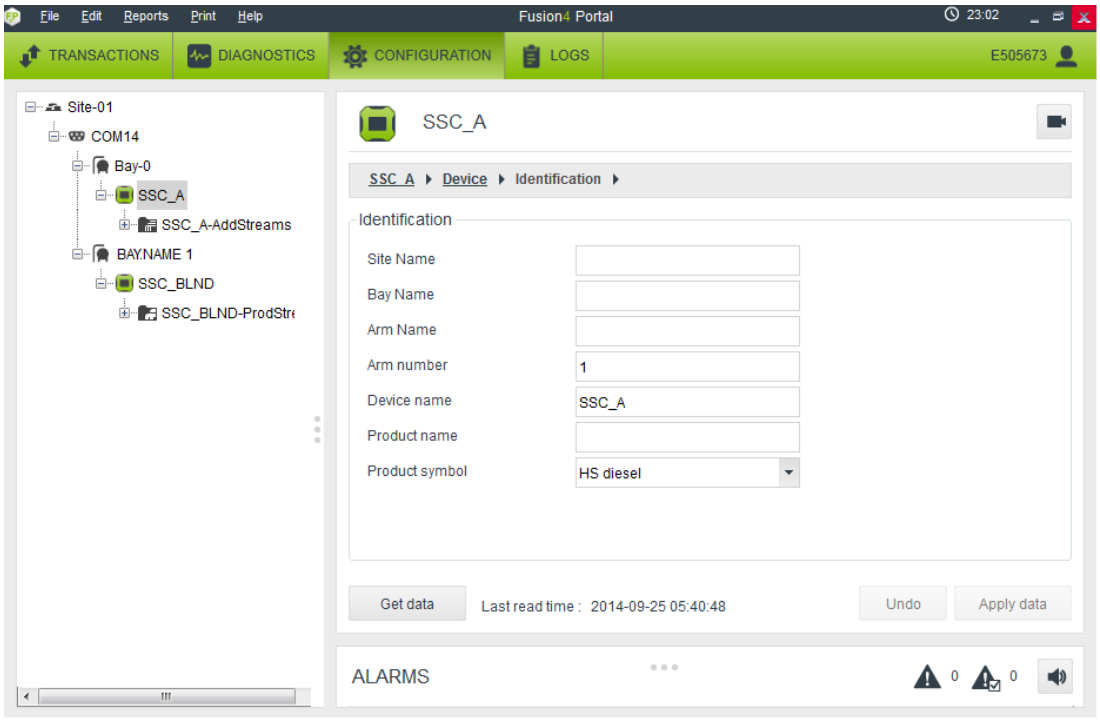
3. Click Device.

   The Device window is displayed.



4. Under Device, click Identification.

   The Identification window is displayed with various parameters.



5. Enter the details for the required parameters.

> CAUTION: If the Fusion4 Portal is unable to get or apply data, an error message is displayed.

6. Click Apply Data to apply these settings.
7. Repeat the above steps to configure various parameters under Device and IO Settings.

   The SSC-A device configuration is complete.

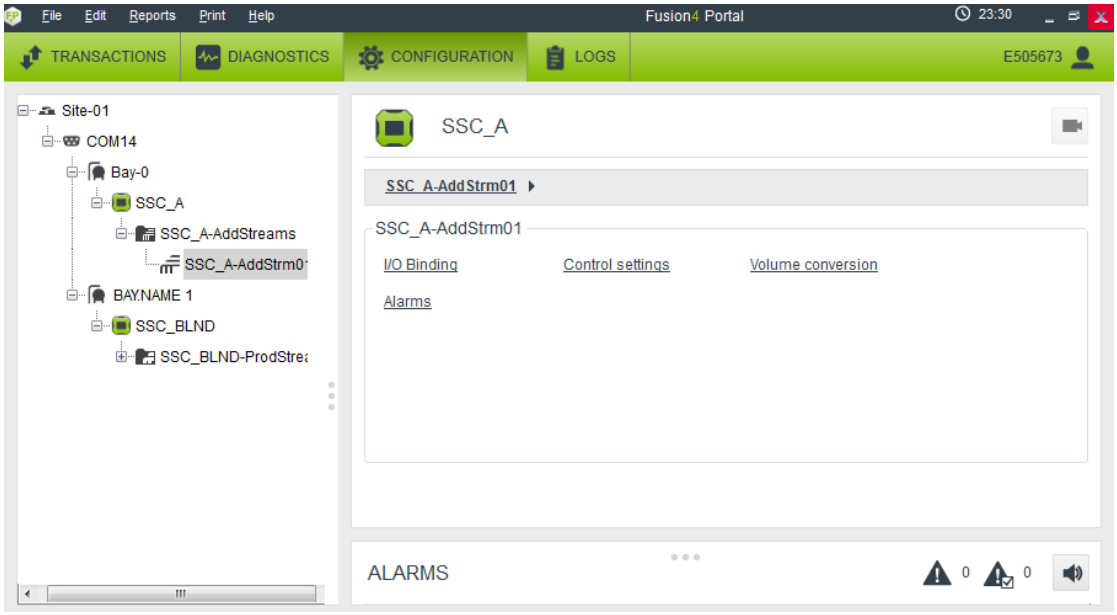
9.1.1 Configuring SSC-A Additive Stream

The SSC-A device has only one additive stream. You can configure parameters for the additive stream of an SSC-A device. The additive stream is displayed when you perform the “Auto-Discover” operation.

To configure an SSC-A additive stream, perform the following steps:

1. In the site tree, select the additive stream that you want to configure, under the SSC-A device.
2. From the menu bar, click the CONFIGURATION tab.

The Configuration window for the selected additive stream is displayed, with various settings such as I/O Binding, Control Settings, Volume conversion, and Alarms.

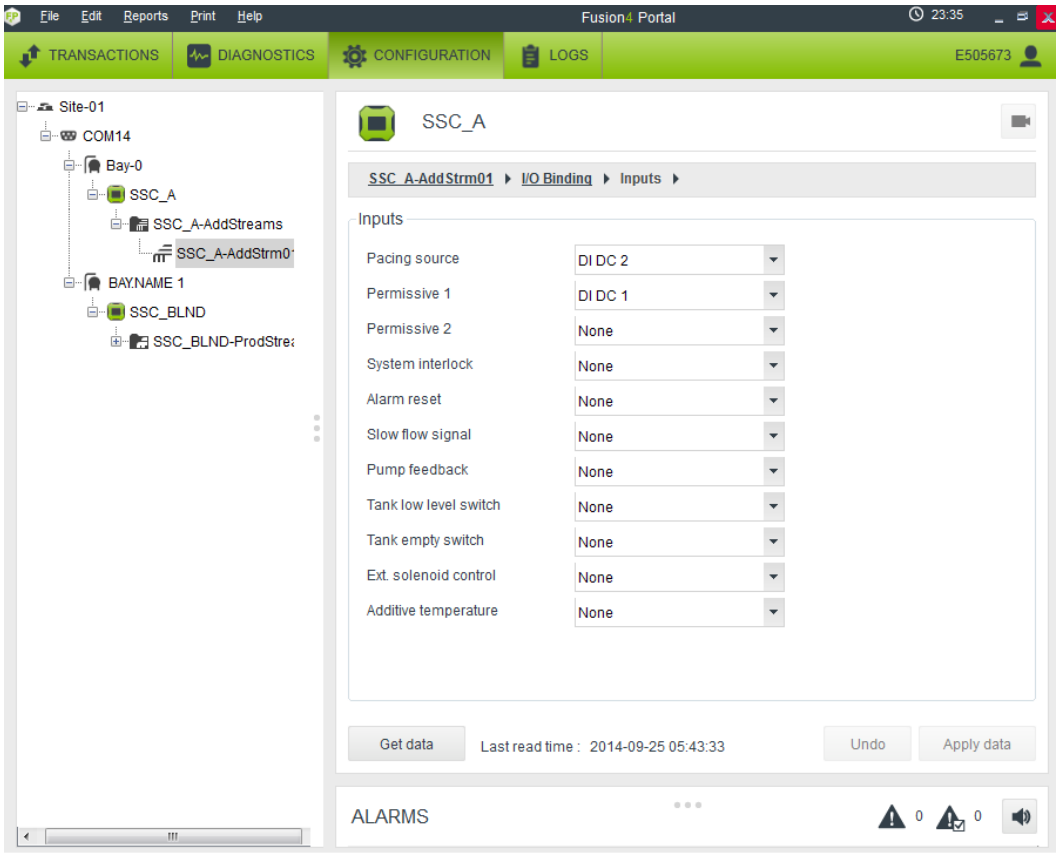


3. Click I/O Binding.

   The I/O Binding window is displayed with settings namely Inputs and Outputs.

4. Click Inputs.

   The Inputs window is displayed with various settings.



5. Enter the details for the required fields.

> CAUTION: If the Fusion4 Portal is unable to get or apply data, an error message is displayed.

6. Click Apply Data to apply these settings.
7. Repeat the above steps to configure various settings for the additive stream.

   The configuration of the additive stream for the SSC-A device is complete.

9.2 Configuring SSC-B

You can configure parameters for an SSC-B device and product streams for the selected SSC-B device.

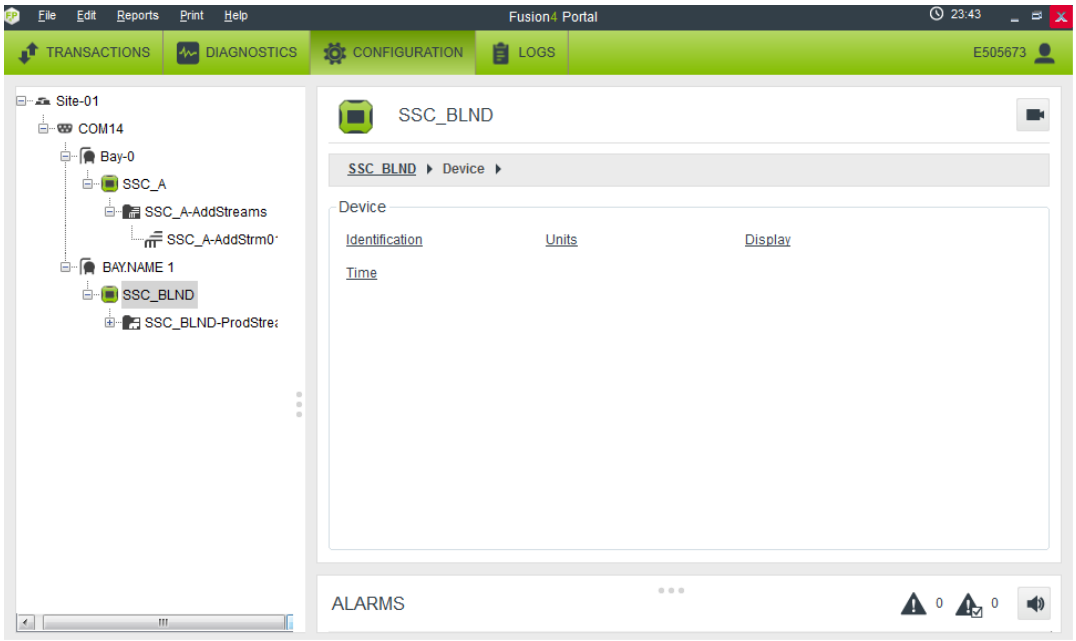
To configure parameters for an SSC-B device, perform the following steps:

1. In the site tree, select the SSC-B device that you want to configure.
2. From the menu bar, click the CONFIGURATION tab.

   The Configuration window for the selected SSC-B device is displayed.

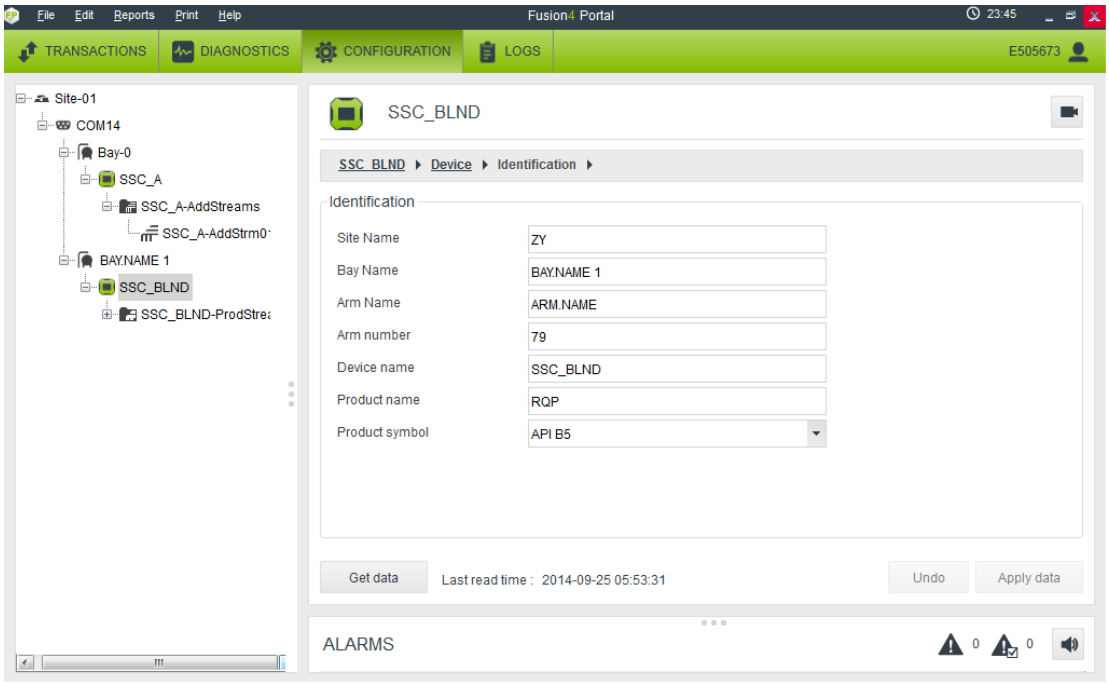
3. Click Device Configuration.

   The Device Configuration window is displayed.



4. Under Device, click Identification.

   The Identification window is displayed with various parameters.



5. Enter the details for the required parameters.

   > CAUTION: If the Fusion4 Portal is unable to get or apply data, an error message is displayed.

6. Click Apply Data to apply these settings.

7. Repeat the above steps to configure various parameters under Device and IO Settings.

   The SSC-B device configuration is complete.

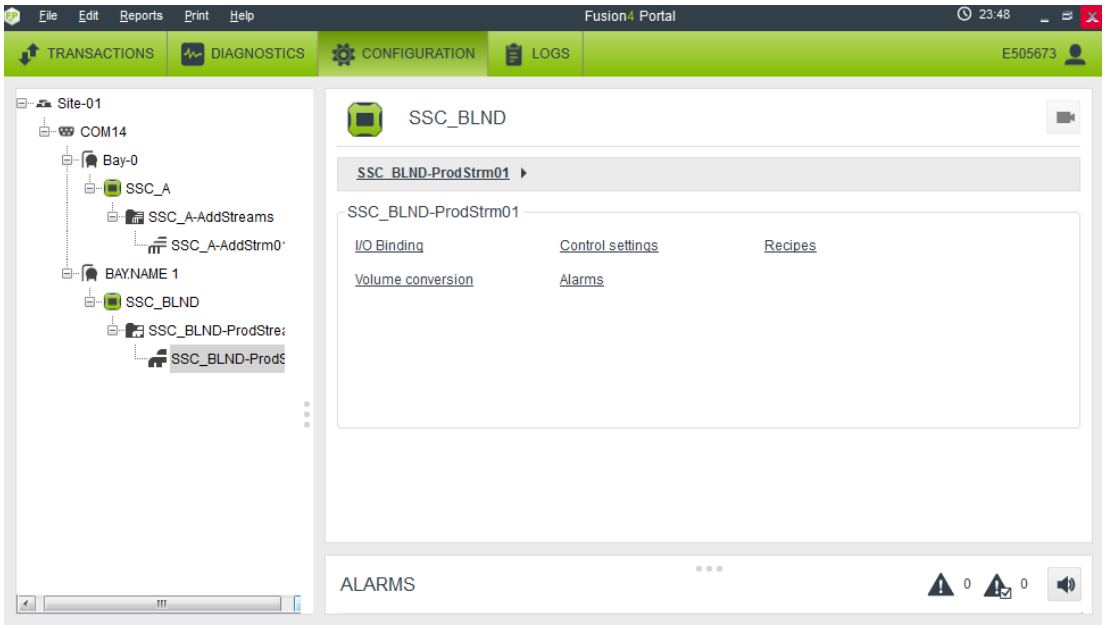
9.2.1 Configuring SSC-B Product Stream

The SSC-B device has only one product stream. You can configure parameters for the product stream of an SSC-B device. The product streams is displayed when you perform the “Auto-Discover” operation.

To configure an SSC-B product stream, perform the following steps:

1. In the site tree, select the product stream that you want to configure, under the SSC-B device.
2. From the menu bar, click the CONFIGURATION tab.

   The Configuration window for the selected product stream is displayed, with various settings such as Identification, I/O Binding, Control Settings, and Alarms.

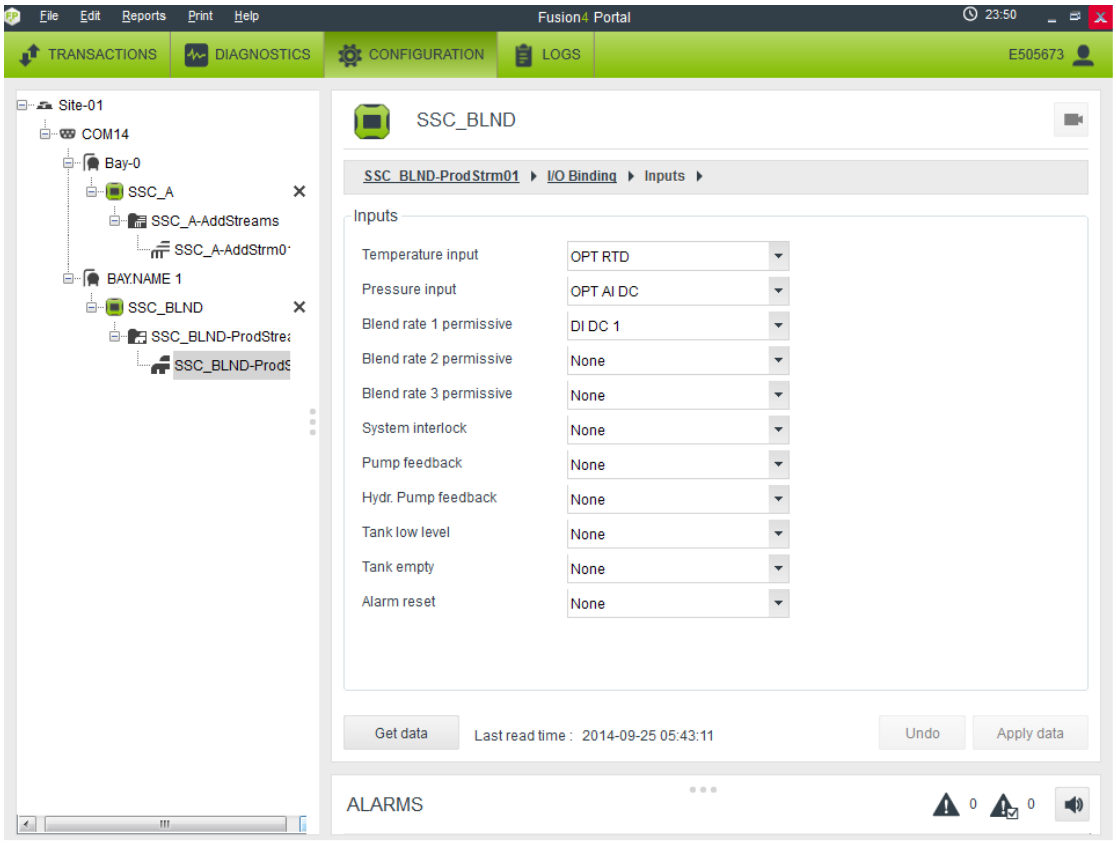


3. Click I/O Binding.

   The I/O Binding window is displayed with settings namely Inputs and Outputs.

4. Click Inputs.

   The Inputs window is displayed with various settings.



5. Enter the details for the required fields.

> CAUTION: If the Fusion4 Portal is unable to get or apply data, an error message is displayed.

6. Click Apply Data to apply these settings.
7. Repeat the above steps to configure various settings for the product stream.

   The configuration of the product stream for the SSC-B device is complete.

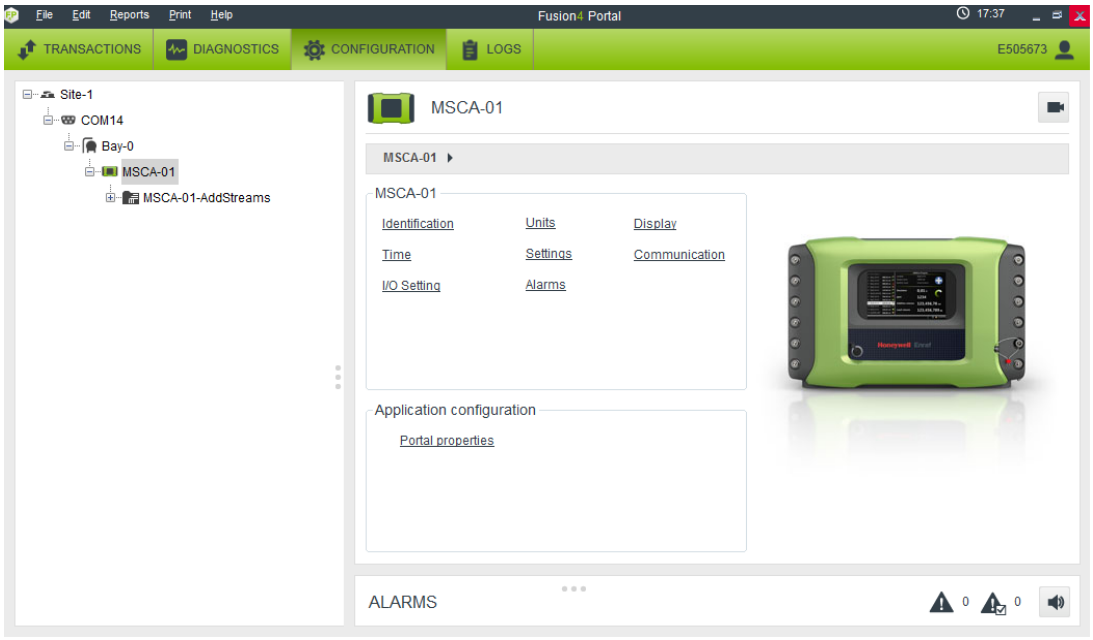
9.3 Configuring MSC-A

You can configure parameters for an MSC-A device, additive streams, arms, and product streams for the selected MSC-A device.

To configure parameters for an MSC-A device, perform the following steps:

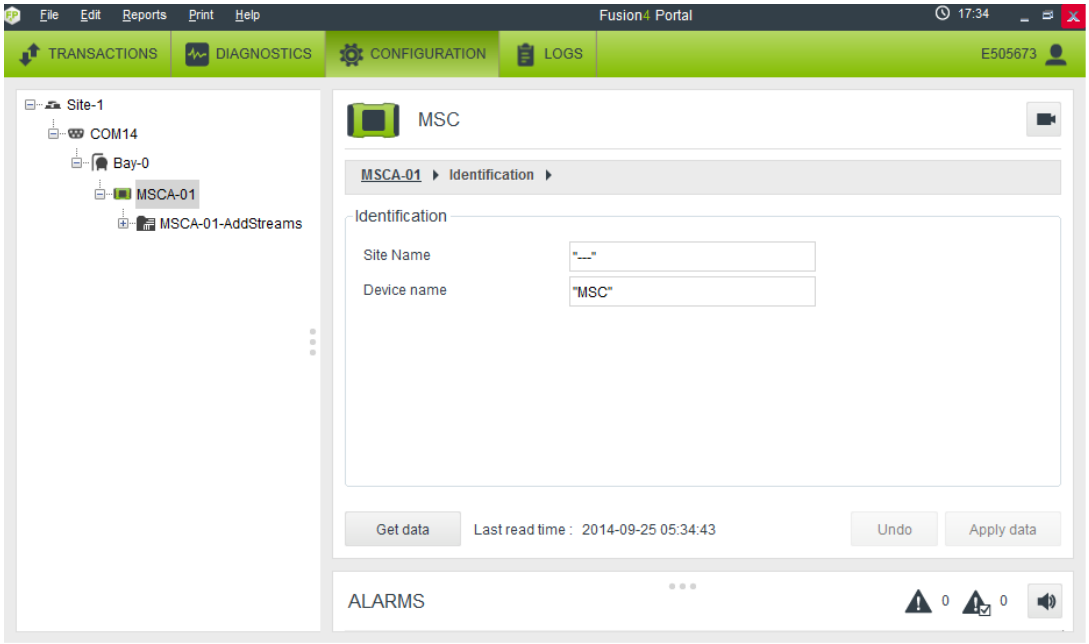
1. In the site tree, select the MSC-A device that you want to configure.
2. From the menu bar, click the CONFIGURATION tab.

   The Configuration window for the selected MSC-A device is displayed.



3. Click Identification.

   The Identification window is displayed with various parameters.



4. Enter the details for the required parameters.

   > CAUTION: If the Fusion4 Portal is unable to get or apply data, an error message is displayed.

5. Click Apply Data to apply these settings.
6. Repeat the above steps to configure other parameters.

   The MSC-A device configuration is complete.

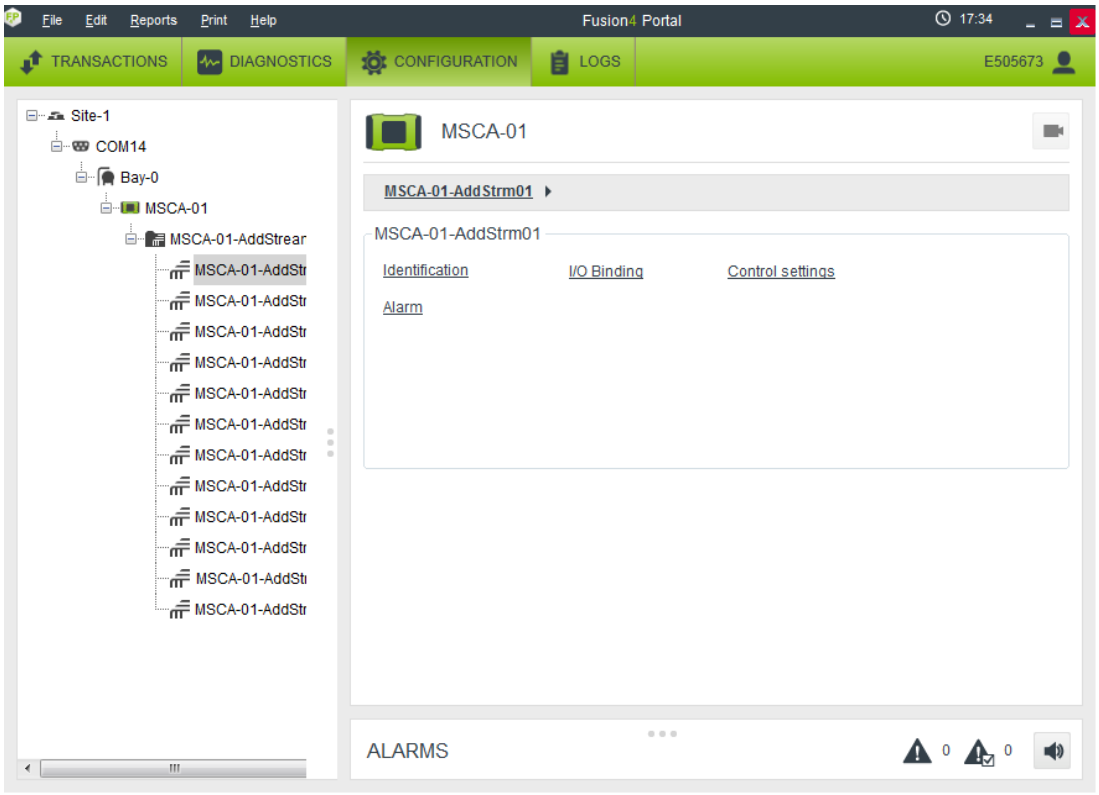
9.3.1 Configuring MSC-A Additive Stream

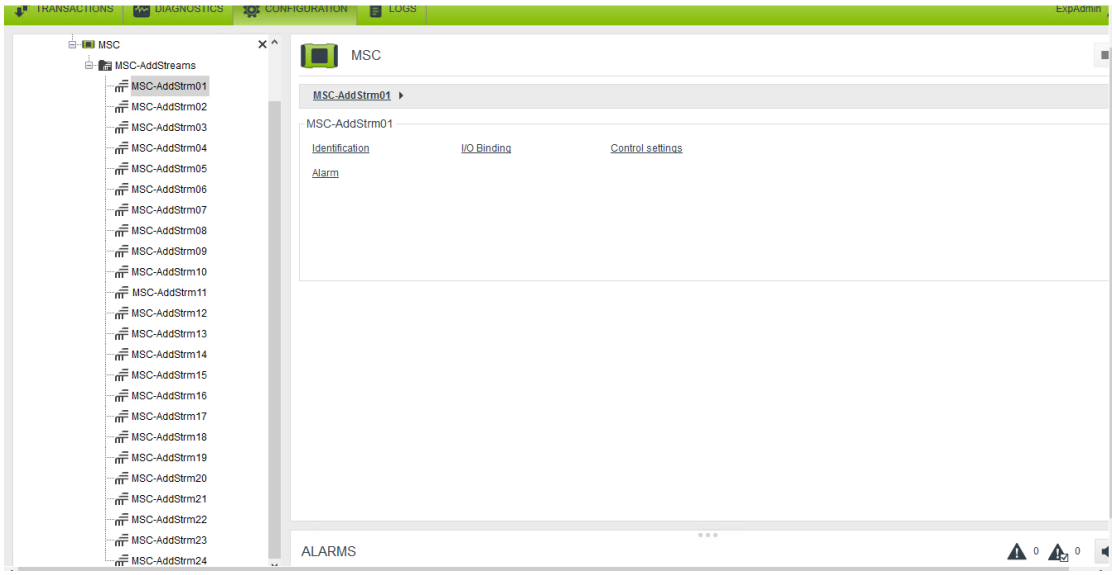
You can configure parameters for additive streams of an MSC-A device. The number of additive streams depends on the license of the MSC-A device. The additive streams are displayed when you perform the “Auto-Discover” operation.

To configure an MSC-A additive stream, perform the following steps:

1. In the site tree, select the additive stream that you want to configure, under the MSC-A device.
2. From the menu bar, click the CONFIGURATION tab.

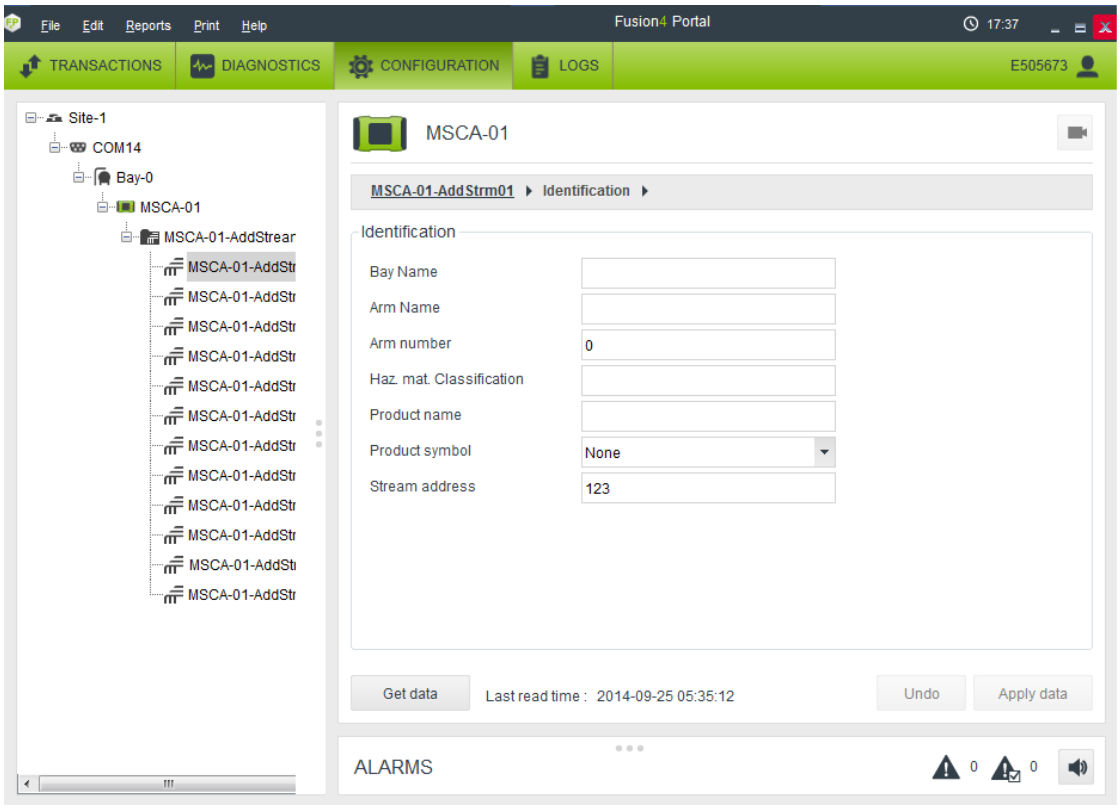
   The Configuration window for the selected additive stream is displayed, with various settings such as Identification, I/O Binding, Control Settings, and Alarms.





3. Click Identification.

   The Identification window is displayed with various settings.



4. Enter the details for the required fields.

> CAUTION: If the Fusion4 Portal is unable to get or apply data, an error message is displayed.

5. Click Apply Data to apply these settings.
6. Repeat the above steps to configure various settings for the additive stream.

   The configuration of the additive stream for the MSC-A device is complete.

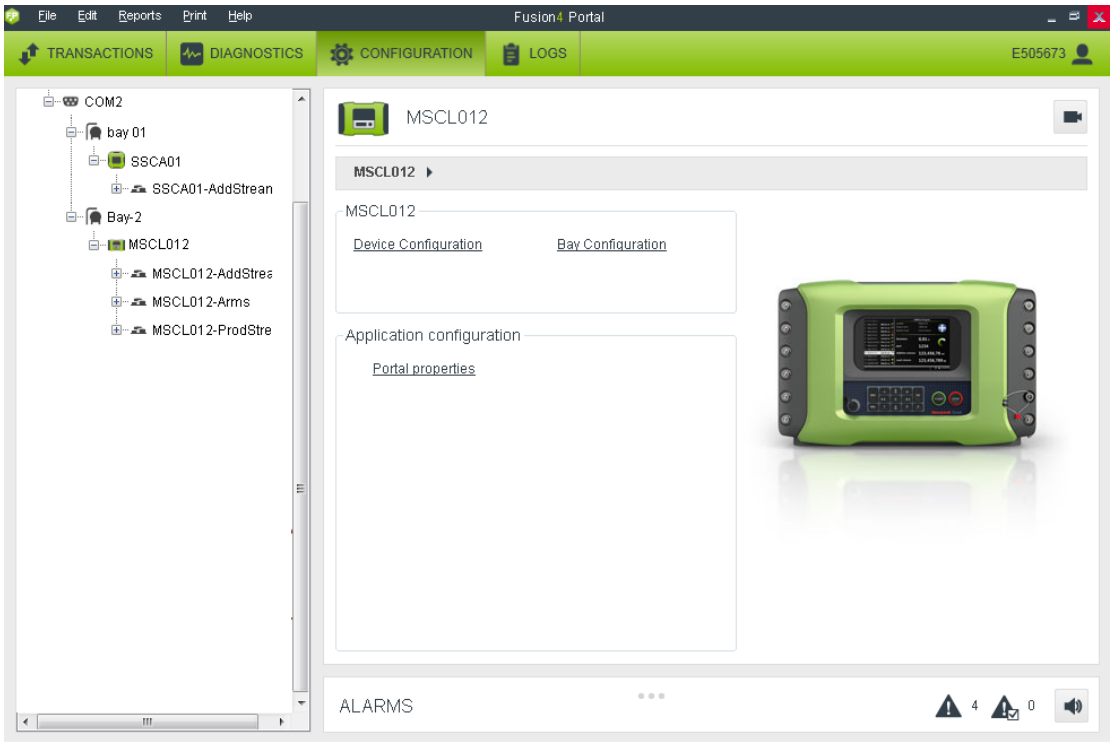
9.4 Configuring MSC-L

You can configure parameters for an MSC-L device, additive streams, arms, and product streams for the selected MSC-L device.

To configure parameters for an MSC-L device, perform the following steps:

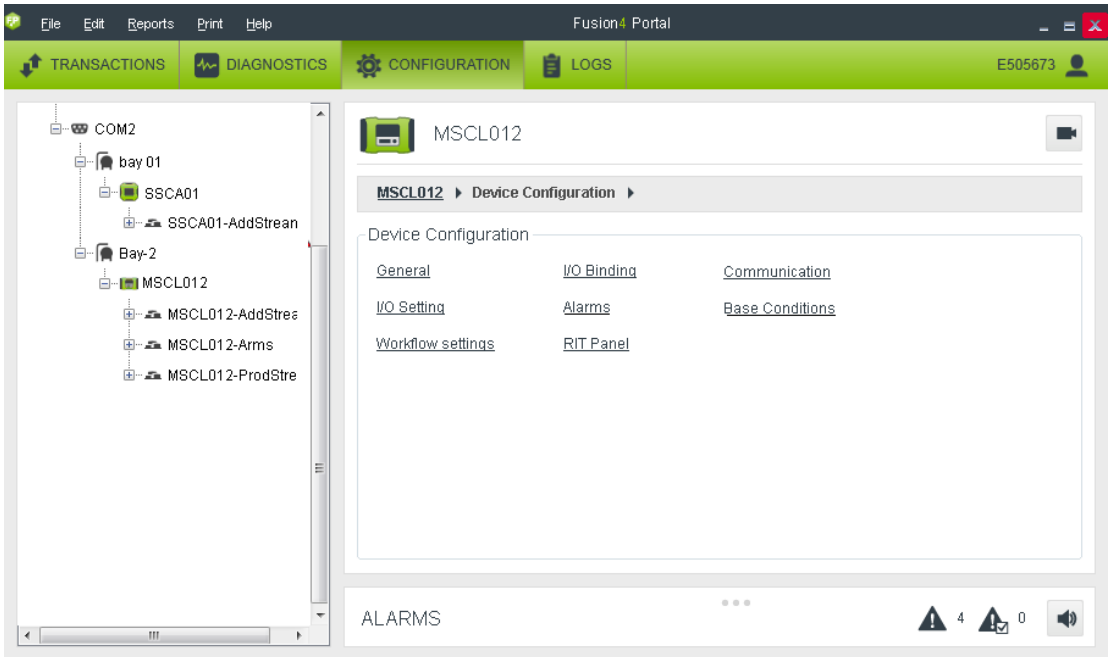
1. In the site tree, select the MSC-L device that you want to configure.
2. Click the CONFIGURATION tab.

The Configuration window for the selected MSC-L device is displayed.



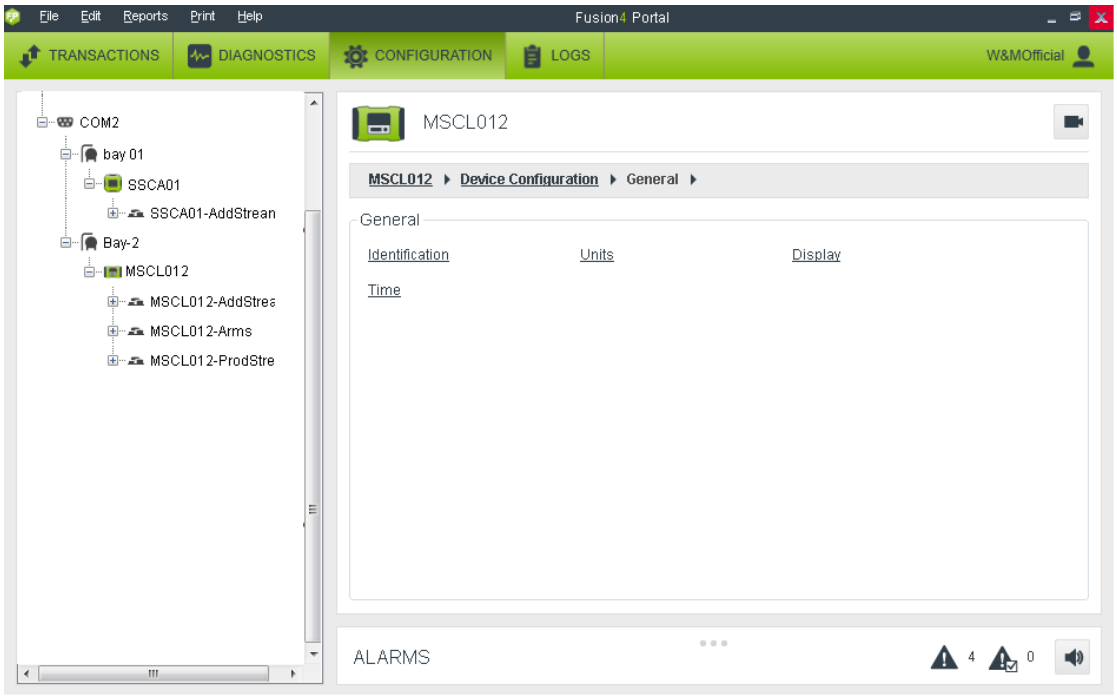
3. Click Device Configuration.

The Device Configuration window is displayed.



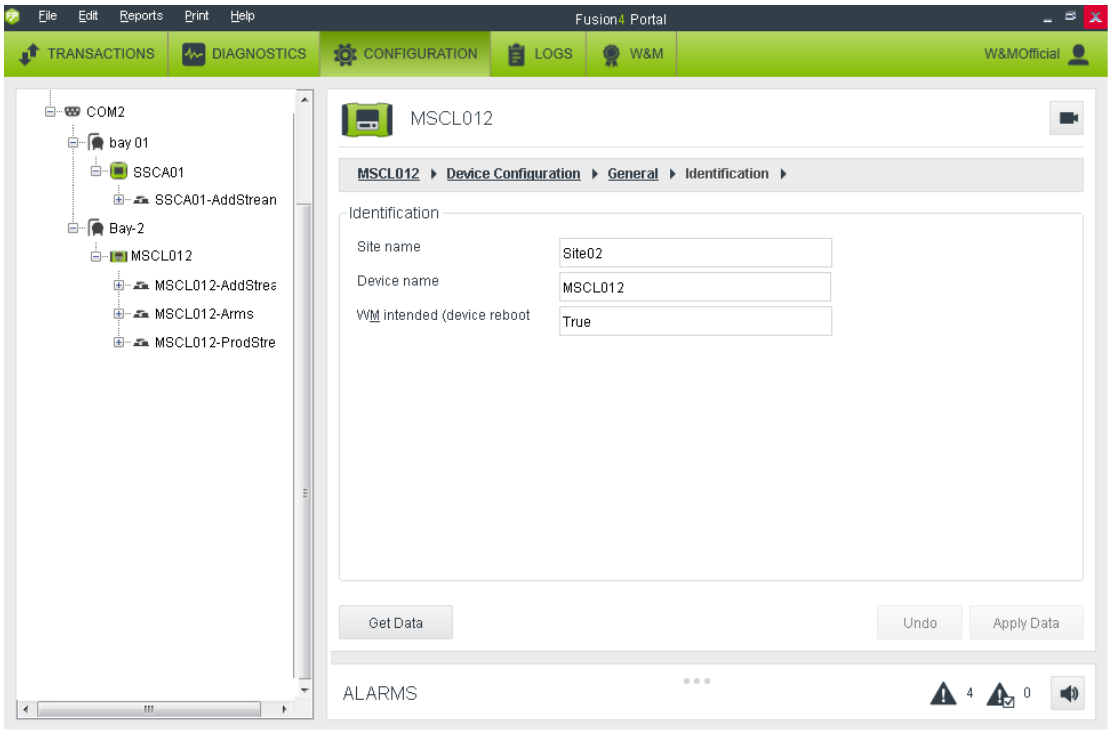
4. Under Device Configuration, click General.

   The General window is displayed with various settings.



5. Under General, click Identification.

   The Identification window is displayed with various parameters.



6. Enter the details for the required parameters.

> CAUTION: If the Fusion4 Portal is unable to get or apply data, an error message is displayed.

7. Click Apply Data to apply these settings.
8. Repeat the above steps to configure various parameters under Device Configuration and Bay Configuration.

   The MSC-L device configuration is complete.

9.4.1 Configuring MSC-L Additive Stream

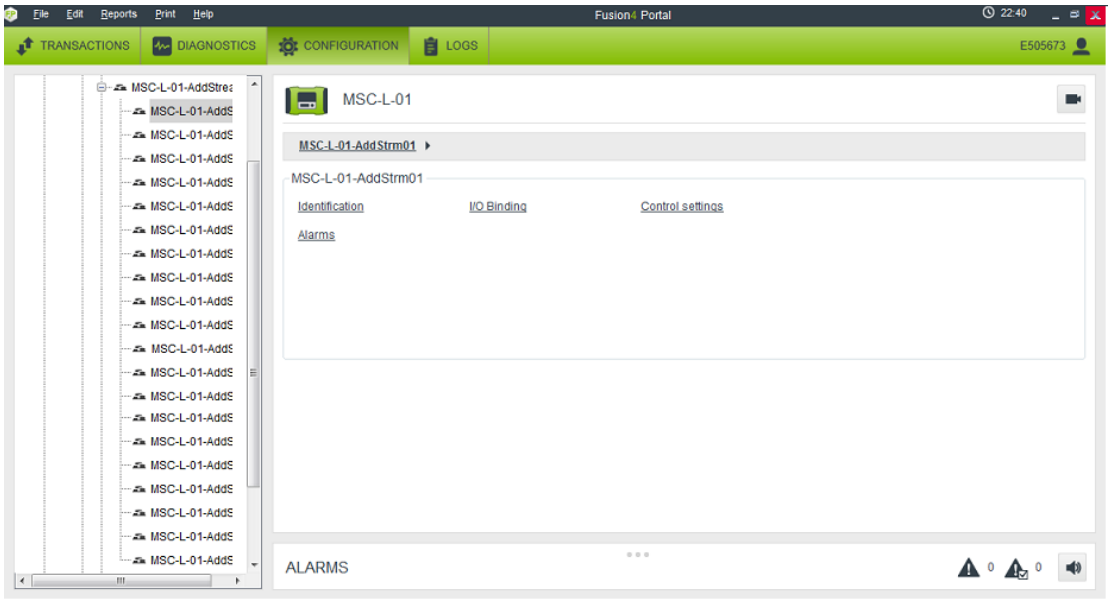
You can configure parameters for additive streams of an MSC-L device. The number of additive streams depends on the license of the MSC-L device. The additive streams are displayed when you perform the “Auto-Discover” operation.

To configure an MSC-L additive stream, perform the following steps:

1. In the site tree, select the additive stream that you want to configure, under the MSC-L device.

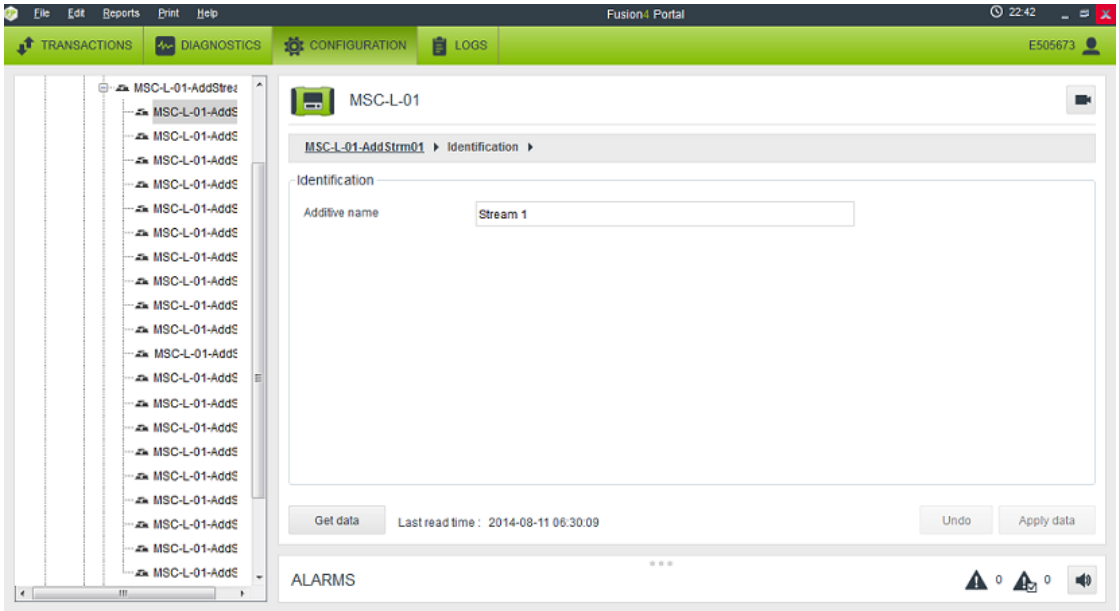
2. From the menu bar, click the CONFIGURATION tab.

   The Configuration window for the selected additive stream is displayed, with various settings such as Identification, I/O Binding, Control Settings, and Alarms.



3. Click Identification.

   The Identification window is displayed with various settings.



4. Enter the details for the required fields.

> CAUTION: If the Fusion4 Portal is unable to get or apply data, an error message is displayed.

5. Click Apply Data to apply these settings.
6. Repeat the above steps to configure various settings for the additive stream.

   The configuration of the additive stream for the MSC-L device is complete.

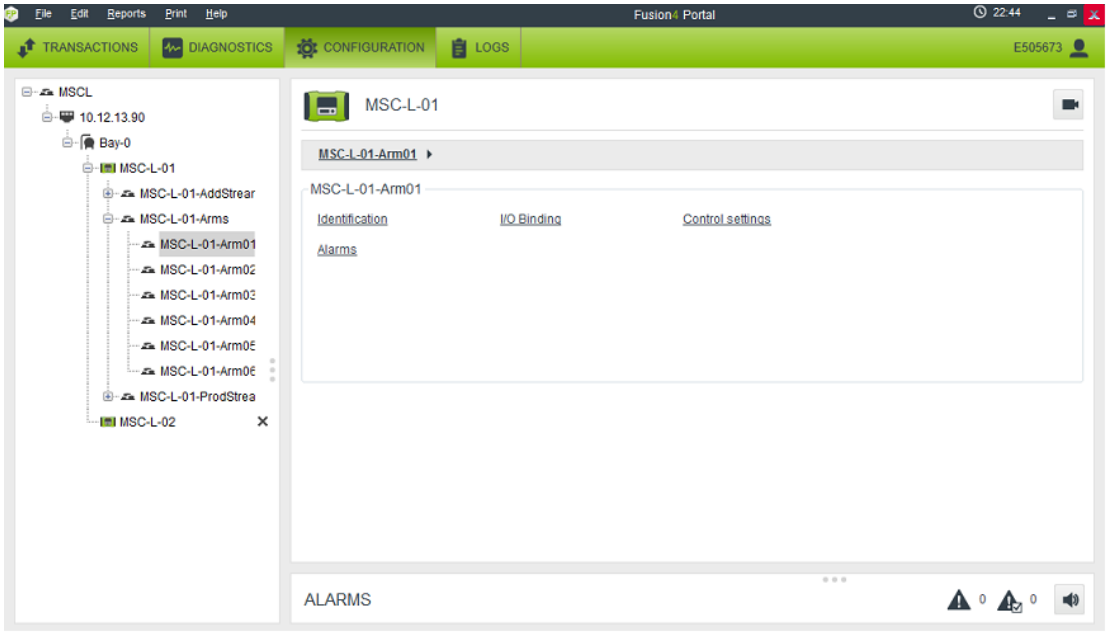
9.4.2 Configuring MSC-L Arm

You can configure parameters for arms of an MSC-L device. The number of arms depends on the license of the MSC-L device. The arms are displayed when you perform the “Auto-Discover” operation.

To configure an MSC-L arm, perform the following steps:

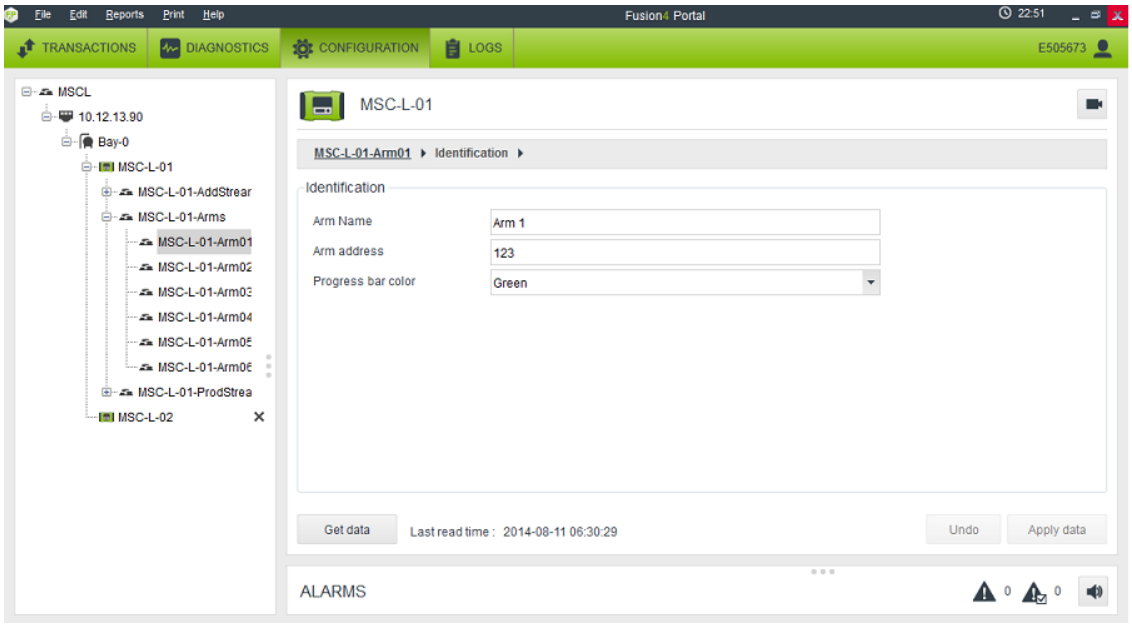
1. In the site tree, select the arm that you want to configure, under the MSC-L device.
2. From the menu bar, click the CONFIGURATION tab.

   The Configuration window for the selected arm is displayed with various settings such as Identification, I/O Binding, Control Settings, and Alarms.



3. Click Identification.

The Identification window is displayed with various settings.



4. Enter the details for the required fields.

> CAUTION: If the Fusion4 Portal is unable to get or apply data, an error message is displayed.

5. Click Apply Data to apply these settings.
6. Repeat the above steps to configure various settings for the arm.

   The configuration of the arm for the MSC-L device is complete.

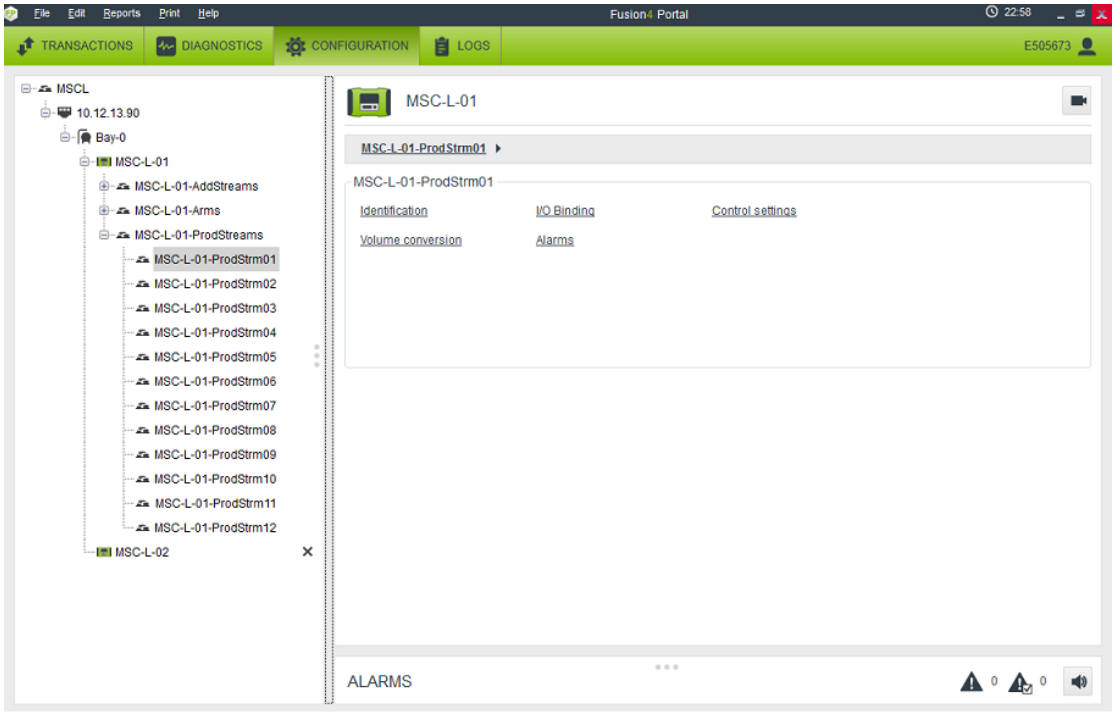
9.4.3 Configuring MSC-L Product Stream

You can configure parameters for product stream of an MSC-L device. The number of product streams depends on the license of the MSC-L device. The product streams are displayed when you perform the “Auto-Discover” operation.

To configure an MSC-L product stream, perform the following steps:

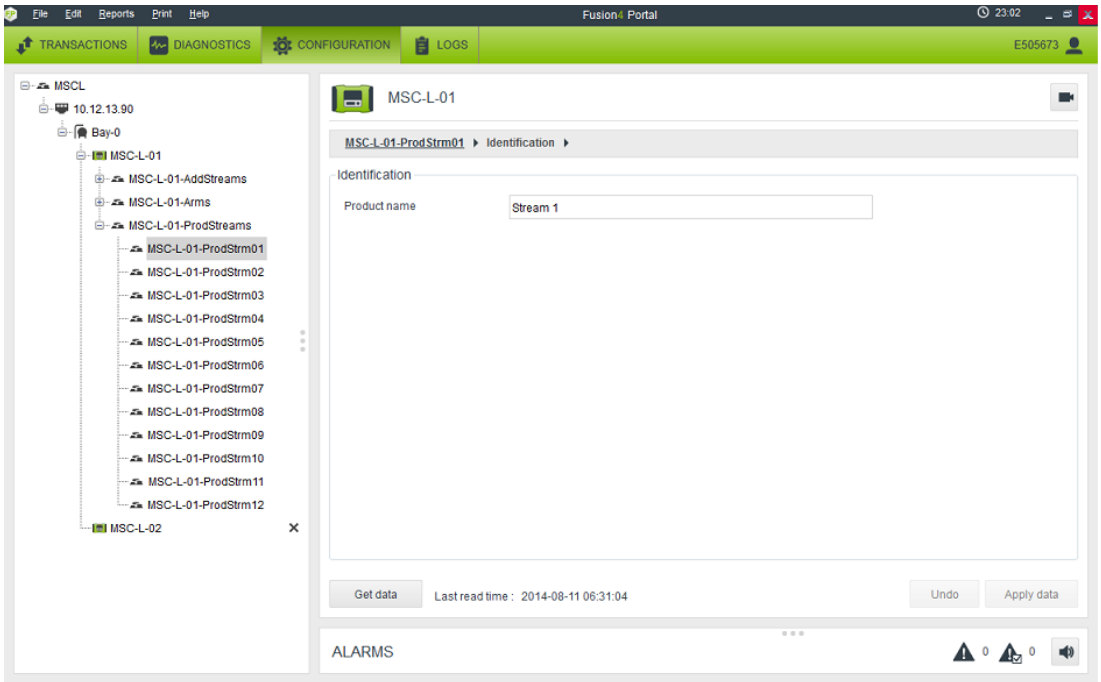
1. In the site tree, select the product stream that you want to configure, under the MSC-L device.
2. From the menu bar, click the CONFIGURATION tab.

The Configuration window for the selected product stream is displayed, with various settings such as Identification, I/O Binding, Control Settings, and Alarms.



3. Click Identification.

The Identification window is displayed with various settings.



4. Enter the details for the required fields.

   CAUTION: If the Fusion4 Portal is unable to get or apply data, an error message is displayed.

5. Click Apply Data to apply these settings.
6. Repeat the above steps to configure various settings for the product stream.

   The configuration of the product stream for the MSC-L device is complete.

9.4.4 Configure Authorization

You can remotely configure the authorization database available in a MSC-L device through the Fusion4 Portal application.

9.4.5 Configure Authorization Setup

You can configure details such as the authorization mode and the type.

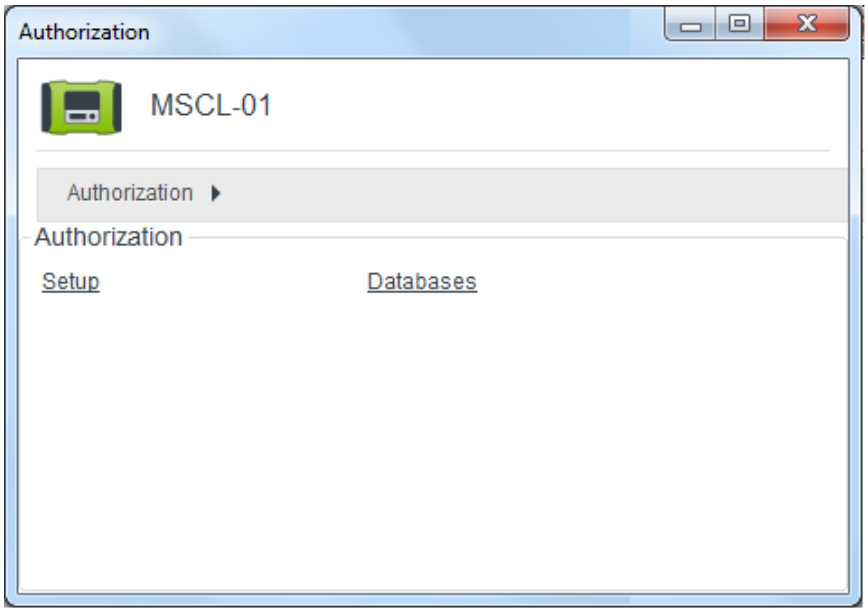
To configure setup authorization, perform the following steps:

1. In the site tree, select the device for which you want to configure authorization.
2. Choose Edit > Configure authorization.

   Or

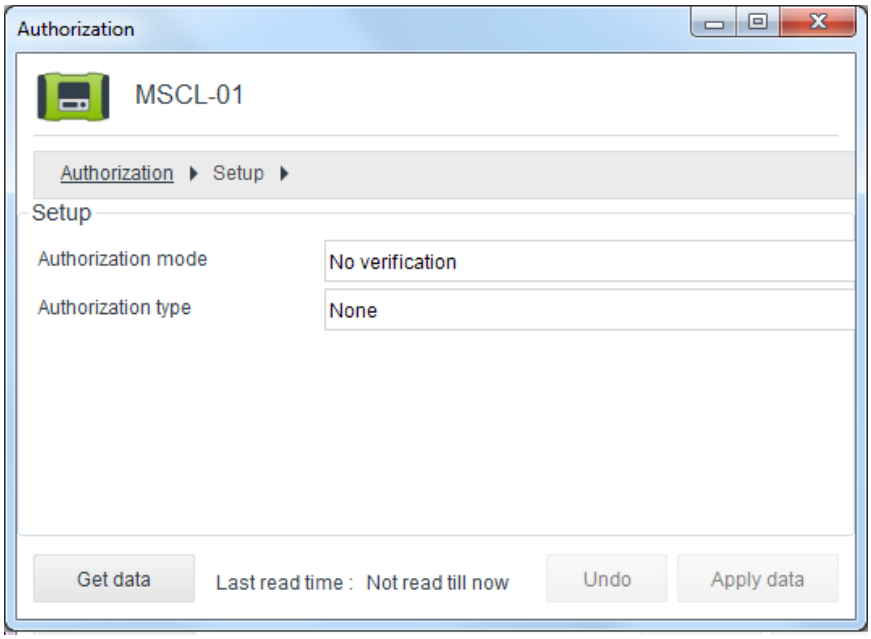
   Right-click the device and then select Configure authorization.

   The Authorization dialog box is displayed.



3. Under Authorization, click Setup.

   The following dialog box is displayed.



4. From the Authorization mode drop-down list, select one of the following:

   - No verification: If you do not want to validate the user and/or loading details with the local/remote database.

- Local verification: If you want to validate the user and/or loading details with the local database.
- Remote verification: If you want to validate the user and/or loading details with the remote database.

5. From the Authorization type drop-down list, select one of the following:
   - None: If you do not want to validate the user or loading details.
   - Pin: If you want to validate the user and/or loading details using PIN.
   - NexWatch: If you want to validate the user and/or loading details using NexWatch card.
   - Nedap: If you want to validate the user and/or loading details using Nedap RFID.
6. Click Apply Data to apply these settings.

   The authorization setup configurations are complete.

9.4.6 Configure User Database Authorization

You can manage users using this option. When you create or update a user, the database is updated.

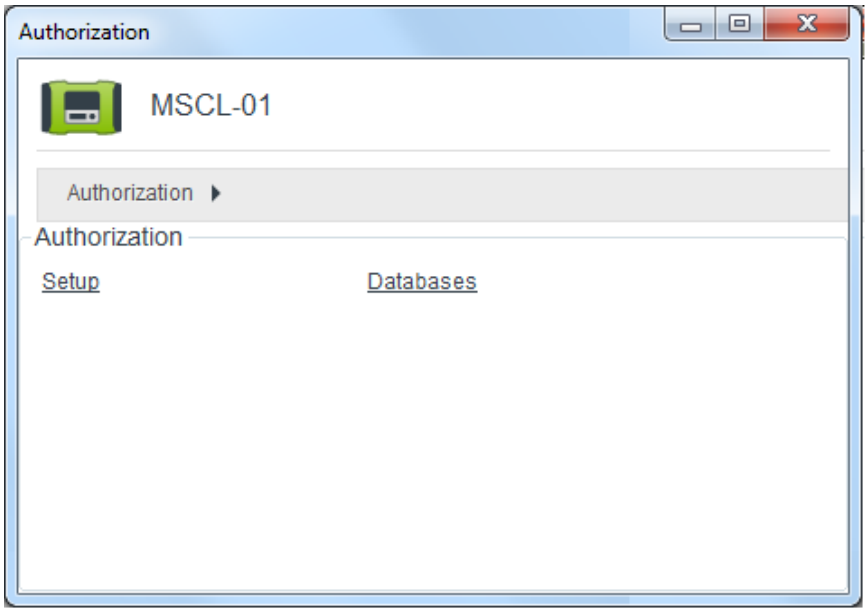
To authorize user database, perform the following steps:

1. In the site tree, select the device for which you want to configure authorization.
2. Choose Edit > Configure authorization.

   Or

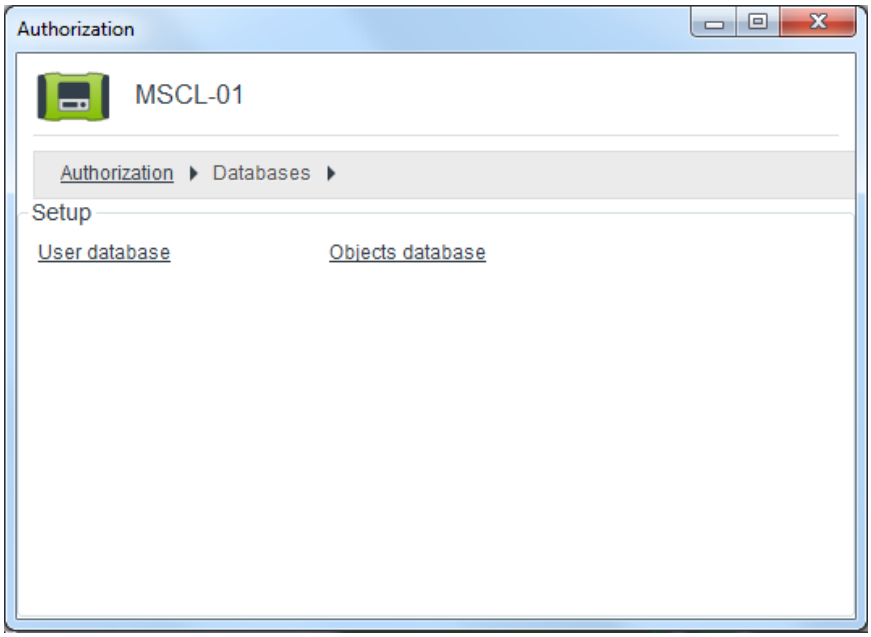
   Right-click the device and then select Configure authorization.

   The Authorization dialog box is displayed.



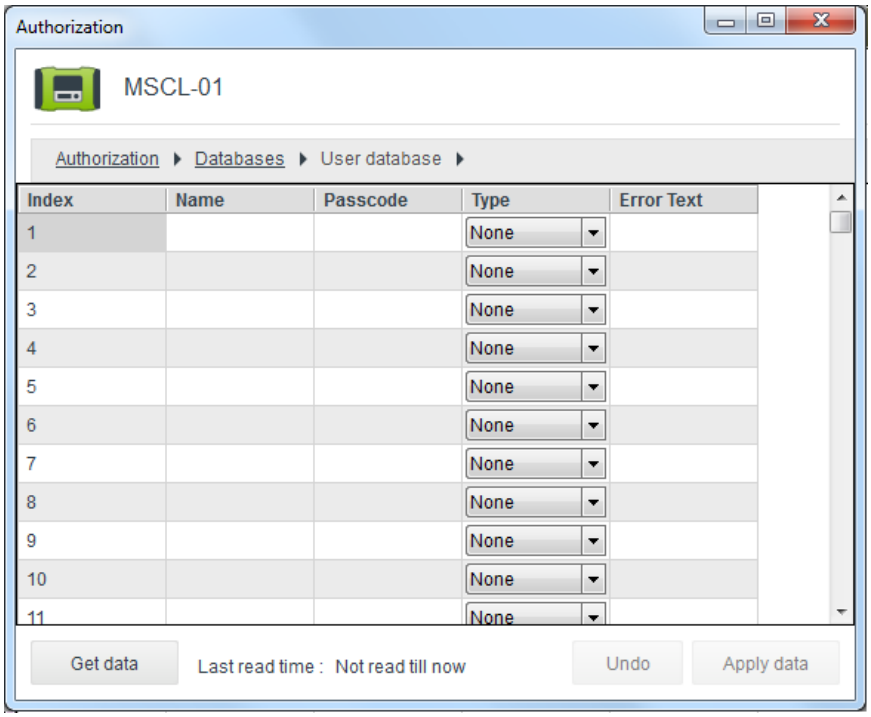
3. Under Authorization, click Databases.

   The following dialog box is displayed.



4. Click User database.

   The following dialog box is displayed.



5. Perform the following:

   a. In the Name box, type the name of the driver in the MSC-L transaction. The maximum length of the name is 16 characters.

   b. In the Passcode box, type the passcode of the user database. Ensure that the passcode is unique for each user. The maximum length of the passcode is 10 characters.

   c. From the Type drop-down list, select the type of the user database. The available options are SL1, SL2, SL3, and None. SL represents the security levels where, SL1 has minimal privileges and SL3 has maximum privileges. You must select 'None' if you want to remove a user from the database.

      The Error Text box displays the details error messages, if any, for the user.

6. Repeat step 5 for other user databases as applicable.

7. Click Apply Data to apply these settings.

   The configuration of user database authorization is complete.

9.4.7 Configure Objects Database Authorization

You can manage objects using this option. When you create or update an object, the database is updated.

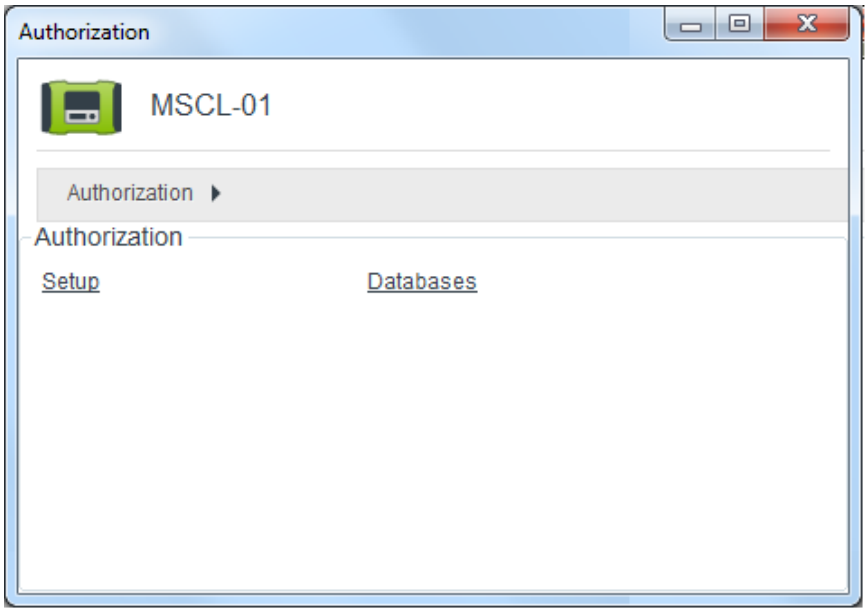
To authorize object database, perform the following steps:

1. In the site tree, select the device for which you want to configure authorization.
2. Choose Edit > Configure authorization.

   Or

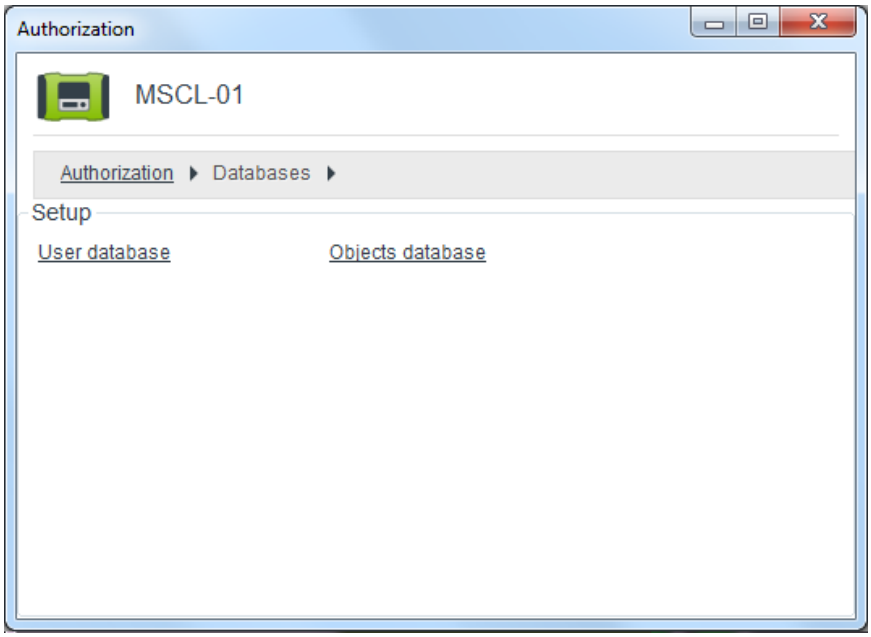
   Right-click the device and then select Configure authorization.

   The Authorization dialog box is displayed.



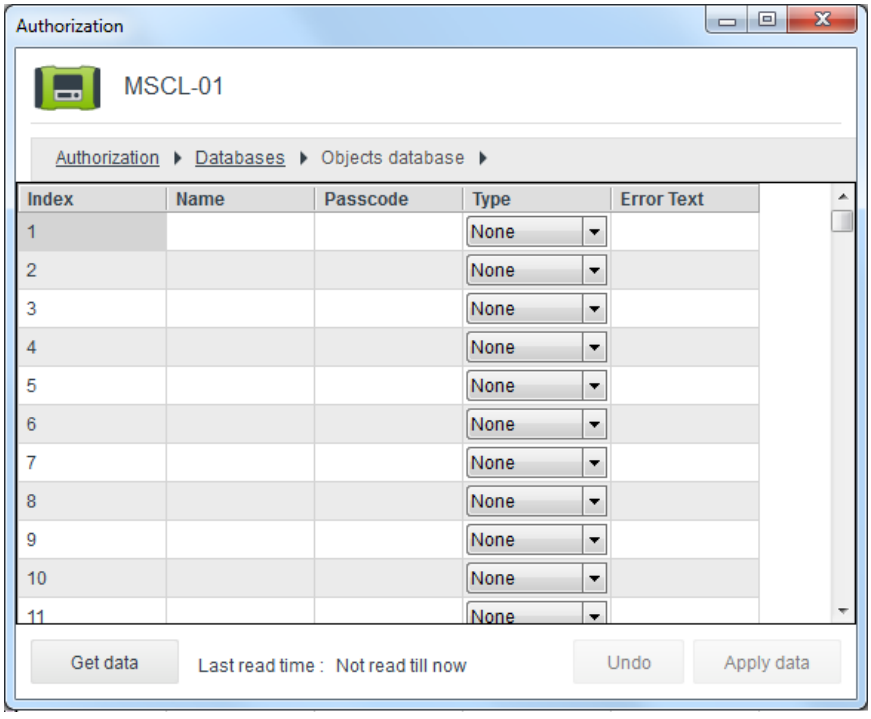
3. Under Authorization, click Databases.

   The following dialog box is displayed.



4. Click Objects database.

   The following dialog box is displayed.



5. Perform the following:

a. In the Name box, type the name of the object i.e Vehicle, Carrier, Trailer, and Contract in the MSC-L transaction. The maximum length of the object is 16 characters.

b. In the Passcode box, type the passcode of the objects database. Ensure that the passcode is unique for each user. The maximum length of the passcode is 10 characters.

c. From the Type drop-down list, select the type of the object. For The available options are Vehicle, Carrier, Trailer, Contract, and None. You must select 'None' if you want to remove an object from the database.

   In the Error Text box, displays the details error messages, if any, for the objects.

6. Repeat step 5 for other objects databases as applicable.
7. Click Apply Data to apply these settings.

   The configuration of objects database authorization is complete.

9.4.8 Archive authorization

You can save the authorizations of setup, users, and/or objects of a MSC-L device and later replicate these configurations in other MSC-L devices. The options to archive and upload configurations reduce the configuration time required at the site

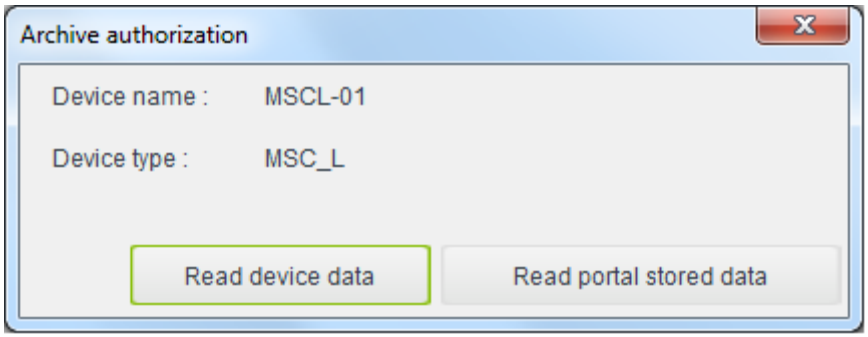
To archive authorization, perform the following steps:

1. In the site tree, select the device whose authorization you want to archive.
2. Choose Edit > Archive authorization.

   Or

   Right-click the device and then select Archive authorization.

   The Archive authorization dialog box is displayed with the details of the selected device name and type.



3. Click Read device data to archive the data stored in the real device.

   Or

   Click Read portal stored data to archive the data stored in the Fusion4 Portal application.

   The Save As dialog box is displayed.

4. Type the name of the XML file and then click Save.

   A message appears indicating that the XML file is created at the selected path.

9.4.9 Upload authorization

You can upload the details of setup, users, and/or objects that are already archived.

To upload authorization, perform the following steps:

1. In the site tree, select the device whose authorization you want to upload.
2. Choose Edit > Upload authorization.

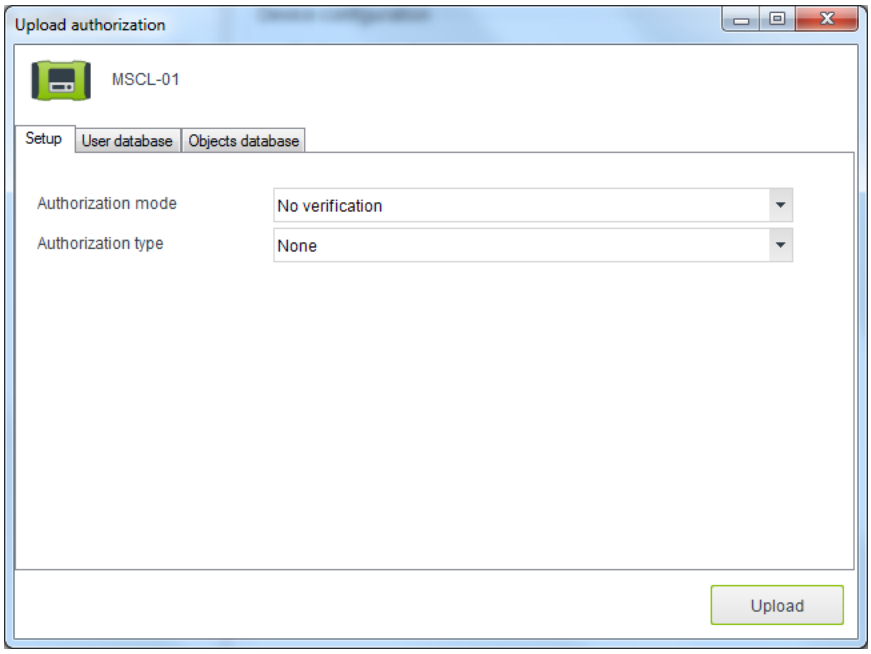
   Or

   Right-click the device and then select Upload authorization.

   The Open dialog box is displayed.

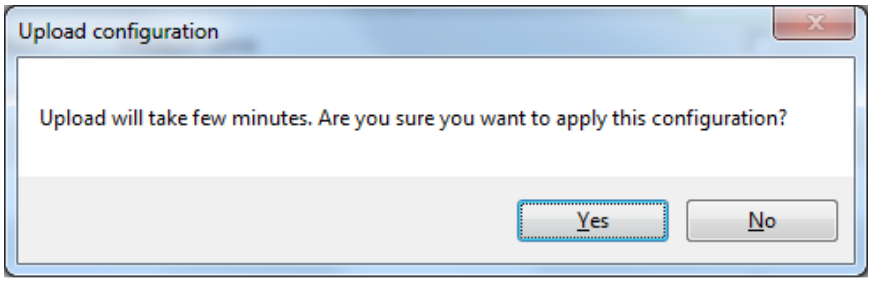
3. Choose the XML file where you want to upload the authorization. Ensure that you select the XML file with appropriate license.
4. Click Open.

   The Upload authorization window is displayed.



5. Click Upload.

   The following message is displayed.



6. Click Yes.

   The configurations are successfully uploaded.

9.5 Archive Configurations

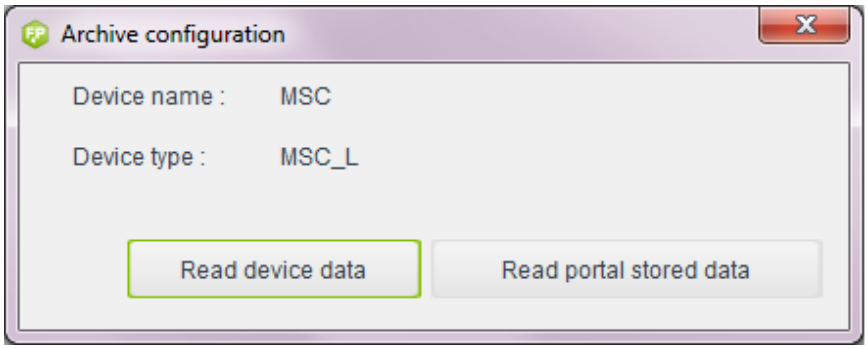
You can save the configurations of a device and later replicate these configurations in other devices. The options to archive and upload configurations reduce the configuration time required at the site.

> NOTE: You cannot archive the communication parameters using this option.

To archive configuration, perform the following steps:

1. In the site tree, select the device whose configuration you want to archive.
2. Right-click the device and then select Archive Configuration.

   The Archive configuration dialog box is displayed with the details of the selected device name and type.



3. Click Read device data to archive the data stored in the real device.

   Or

   Click Read portal stored data to archive the data stored in the Fusion4 Portal application.

   The Save As dialog box is displayed.

4. Type the name of the XML file and then click Save.

   A message appears indicating that the XML file is created at the selected path.

9.6 Upload Configurations

You can upload the details of devices that are already archived.

> NOTE: You cannot upload the communication parameters using this option.

To upload configuration, perform the following steps:

1. In the site tree, select the device whose configuration you want to upload.
2. Choose Edit > Upload Configuration.

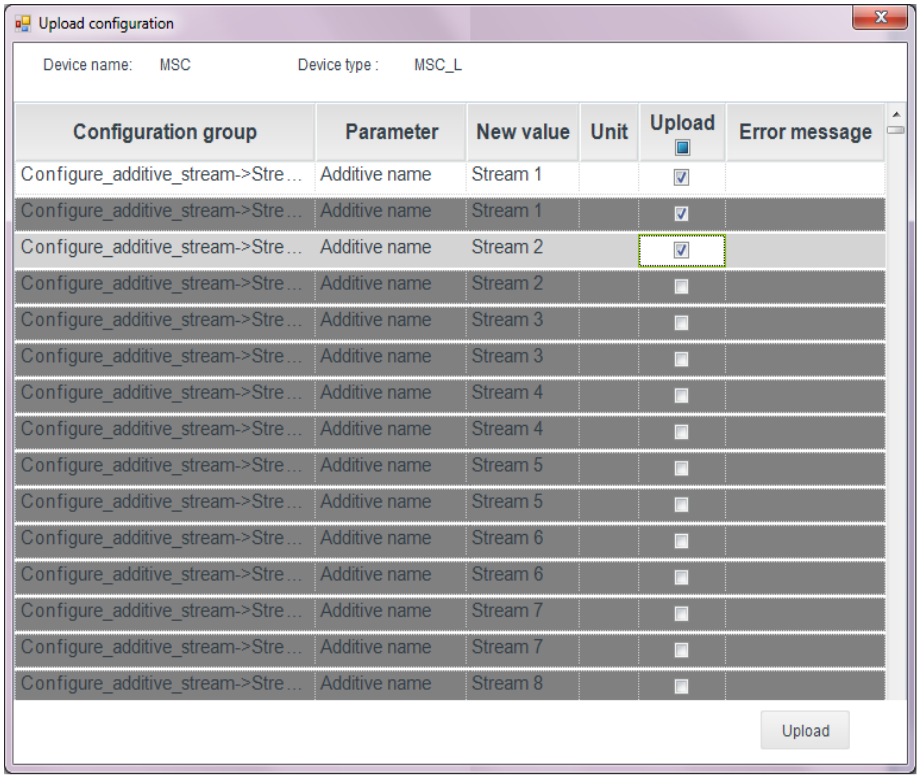
Or

Right-click the device and then select Upload Configuration.

The Open dialog box is displayed.

3. Choose the XML file where you want to upload the configurations. Ensure that you select the XML file with appropriate license.
4. Click Open.

The Upload configuration window is displayed.



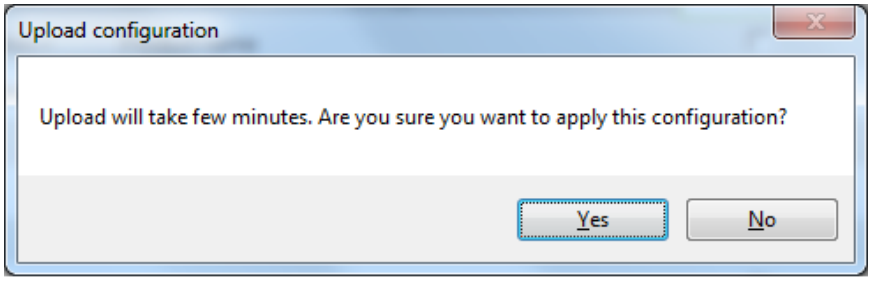
The following details are displayed by default.

- Device name: The name of the device whose configuration you want to upload.
- Device type: The type of device selected.
- Configuration group: The configuration group whose details you want to upload.
- Parameter: The parameter name.

- New Value: The new value of the parameter.
- Unit: The unit in which the parameter is measured.
- Error Message: The error message corresponding to the parameter.

5. In the Upload list, select the check box corresponding to the configuration groups and parameters whose details you want to upload.
6. Click Upload.

   The following message is displayed.



7. Click Yes.

   The configurations are successfully uploaded.

10 Monitor Module

> CAUTION: Do not shutdown Fusion4 Portal when transactions are taking place, since this disrupts the automatic printing process. The transactions are stored on the hard disk though, so you can retrieve and print them using the Print BoL application.

10.1 Transactions in Fusion4 Portal

Fusion4 Portal enables you to view completed device transactions. By default, the transactions that are completed within the last 24 hours are automatically displayed in the list of transactions. In addition, you can search for transactions that were completed on a specific date or within a specific period of time, and/or that match certain search criteria.

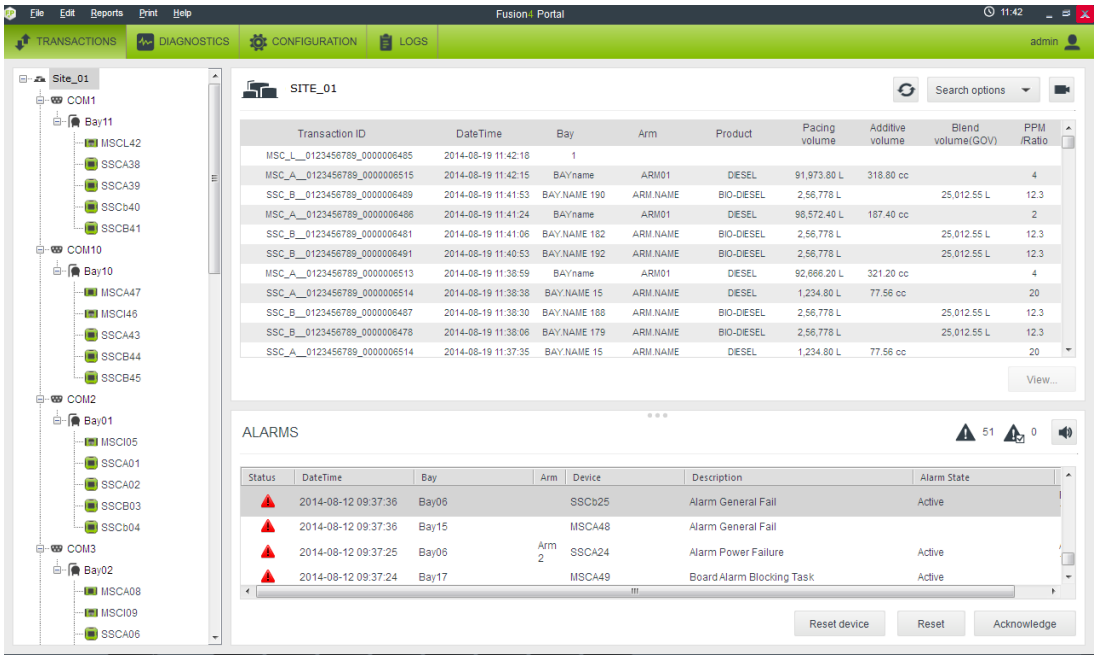
> NOTE: The Fusion4 Portal application retrieves transactions of a device if the serial number is configured appropriately in the real device.

10.1.1 Viewing Transactions in Real Time

To view completed transactions, perform the following steps:

1. In Fusion4 Portal, click the TRANSACTIONS tab.

   The Transactions panel is displayed.



2. In the site tree panel, select the site, COM port, IP port, loading bay, or device (1010CB, SSC-A, SSC-B, MSC-A, MSC-L) for which you want to view the completed transactions.

   The name of the site, COM port, loading bay, or device is highlighted. For the selected site, COM port, loading bay, or device, the completed transactions are displayed in the list of transactions.

3. To view the details of a transaction:

   a. From the list of transactions, select the transaction of which you want to view the details.

      The selected transaction is highlighted.

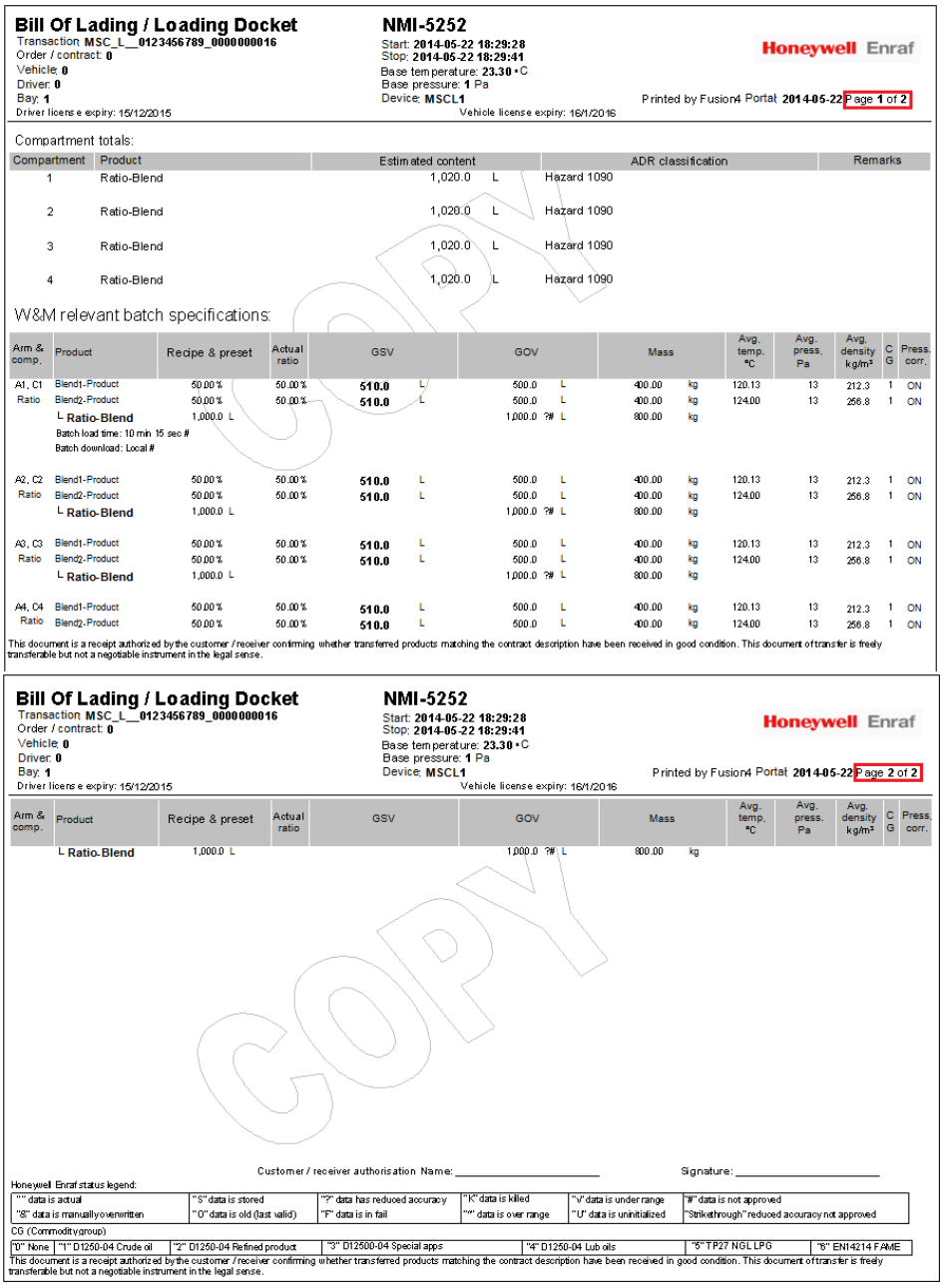
      > NOTE: You can select more than one transaction at a time. When selecting more than one transaction, keep the following in mind: You can view/print 25 SSC-A and/or MSC-A transactions or one Bill of Lading (1010CB, SSC-B, MSC-L) at a time. To select two or more transactions, press and hold the [Ctrl] key on your keyboard and select the transactions. To select two or more successive transactions, you can also press and hold the [Shift] key on your keyboard and select the first and

> he last transaction. To select all transactions in the list press and hold he [Ctrl] key and subsequently press [A] on your keyboard.

b. Click View.

   The details of the selected transaction(s) are displayed in the View Report window.

The following figure represents the first and second pages of the MSC-L BOL report.



Bill Of Lading / Loading Docket
Transaction: MSC_L__0123456789_0000000016
Order / contract: 0
Vehicle: 0
Driver: 0
Bay: 1
Driver license expiry: 15/12/2015

NMI-5252
Start: 2014-05-22 18:29:28
Stop: 2014-05-22 18:29:41
Base temperature: 23.30 °C
Base pressure: 1 Pa
Device: MSCL1
Vehicle license expiry: 16/1/2016

Honeywell Enraf

Printed by Fusion4 Portal 2014-05-22 Page 1 of 2

Compartment totals:

Compartment	Product	Estimated content		ADR classification	Remarks
1	Ratio-Blend	1,020.0	L	Hazard 1090	
2	Ratio-Blend	1,020.0	L	Hazard 1090	
3	Ratio-Blend	1,020.0	L	Hazard 1090	
4	Ratio-Blend	1,020.0	L	Hazard 1090	

W&M relevant batch specifications:

Arm & comp.	Product	Recipe & preset	Actual ratio	GSV		GOV		Mass		Avg. temp. °C	Avg. press. Pa	Avg. density kg/m³	C G	Press. corr.
A1, C1	Blend1-Product	50.00 %	50.00 %	**510.0**	L	500.0	L	400.00	kg	120.13	13	212.3	1	ON
Ratio	Blend2-Product	50.00 %	50.00 %	**510.0**	L	500.0	L	400.00	kg	124.00	13	256.8	1	ON
	└ **Ratio-Blend**	1,000.0 L				1,000.0 ?#	L	800.00	kg					
	Batch load time: 10 min 15 sec #													
	Batch download: Local #													
A2, C2	Blend1-Product	50.00 %	50.00 %	**510.0**	L	500.0	L	400.00	kg	120.13	13	212.3	1	ON
Ratio	Blend2-Product	50.00 %	50.00 %	**510.0**	L	500.0	L	400.00	kg	124.00	13	256.8	1	ON
	└ **Ratio-Blend**	1,000.0 L				1,000.0 ?#	L	800.00	kg					
A3, C3	Blend1-Product	50.00 %	50.00 %	**510.0**	L	500.0	L	400.00	kg	120.13	13	212.3	1	ON
Ratio	Blend2-Product	50.00 %	50.00 %	**510.0**	L	500.0	L	400.00	kg	124.00	13	256.8	1	ON
	└ **Ratio-Blend**	1,000.0 L				1,000.0 ?#	L	800.00	kg					
A4, C4	Blend1-Product	50.00 %	50.00 %	**510.0**	L	500.0	L	400.00	kg	120.13	13	212.3	1	ON
Ratio	Blend2-Product	50.00 %	50.00 %	**510.0**	L	500.0	L	400.00	kg	124.00	13	256.8	1	ON

This document is a receipt authorized by the customer / receiver confirming whether transferred products matching the contract description have been received in good condition. This document of transfer is freely transferable but not a negotiable instrument in the legal sense.

Bill Of Lading / Loading Docket
Transaction: MSC_L__0123456789_0000000016
Order / contract: 0
Vehicle: 0
Driver: 0
Bay: 1
Driver license expiry: 15/12/2015

NMI-5252
Start: 2014-05-22 18:29:28
Stop: 2014-05-22 18:29:41
Base temperature: 23.30 °C
Base pressure: 1 Pa
Device: MSCL1
Vehicle license expiry: 16/1/2016

Honeywell Enraf

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Arm & comp.	Product	Recipe & preset	Actual ratio	GSV	GOV		Mass		Avg. temp. °C	Avg. press. Pa	Avg. density kg/m³	C G	Press. corr.
	└ **Ratio-Blend**	1,000.0 L			1,000.0 ?#	L	800.00	kg					

Customer / receiver authorisation Name: _____ Signature: _____

Honeywell Enraf status legend:

" " data is actual	"S" data is stored	"?" data has reduced accuracy	"K" data is killed	"v" data is under range	"#" data is not approved
"&" data is manually overwritten	"O" data is old (last valid)	"F" data is in fail	"*" data is over range	"U" data is uninitialized	"Strikethrough" reduced accuracy not approved

CG (Commodity group)

"0" None	"1" D1250-04 Crude oil	"2" D1250-04 Refined product	"3" D12500-04 Special apps	"4" D1250-04 Lub oils	"5" TP27 NGL LPG	"6" EN14214 FAME

This document is a receipt authorized by the customer / receiver confirming whether transferred products matching the contract description have been received in good condition. This document of transfer is freely transferable but not a negotiable instrument in the legal sense.

4. Click to close the View Report window. You will return to Fusion4 Portal.

NOTES:

1. By default, the Auto Refresh option is enabled unless it was disabled manually earlier.

   If the Auto Refresh icon is displayed as , the list of transactions displays transactions that were completed in the last 24-25 hours.

   If the Auto Refresh icon is displayed as , the list of transaction is temporarily not refreshed and the search options are available.

2. You can search for transactions that were completed on a specific date or within a specific time period, and/or that match certain search criteria. Subsequently, you can view the details of these transactions. See section for more information.

3. You can only view transactions on the Transactions panel. If you want to print one or more transactions, you can use the Print BoL application.

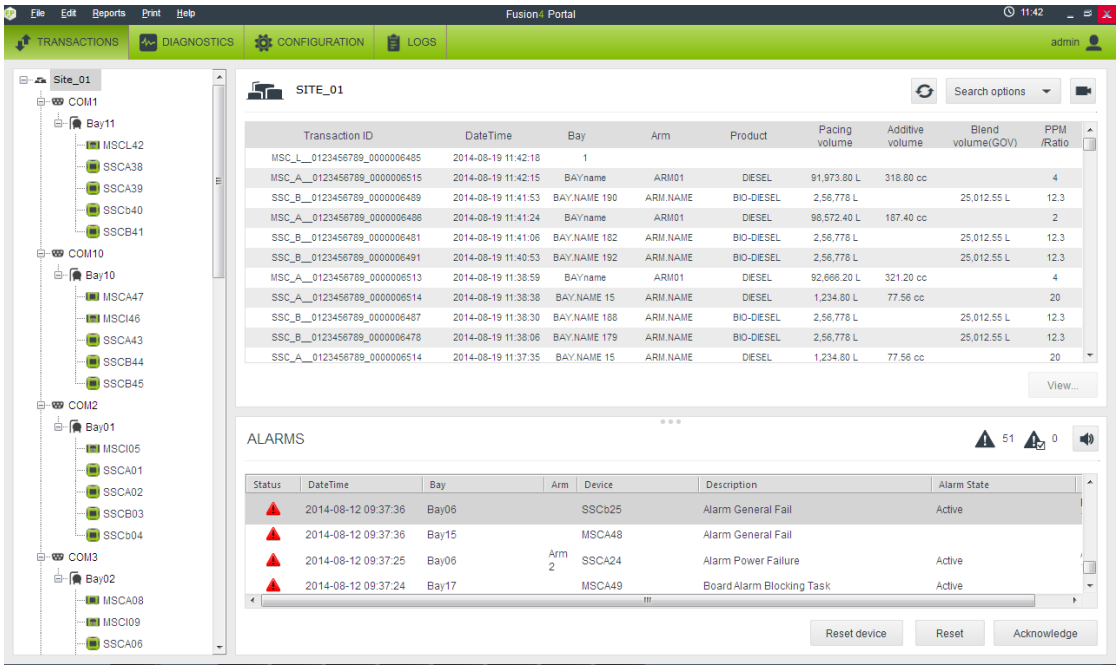
10.2 Searching for Completed Transactions

Fusion4 Portal enables you to search for transactions that were completed on a specific date or within a specific period, and/or that match certain search criteria. Subsequently, you can view the details of these transactions.

To search for completed transactions, perform the following steps:

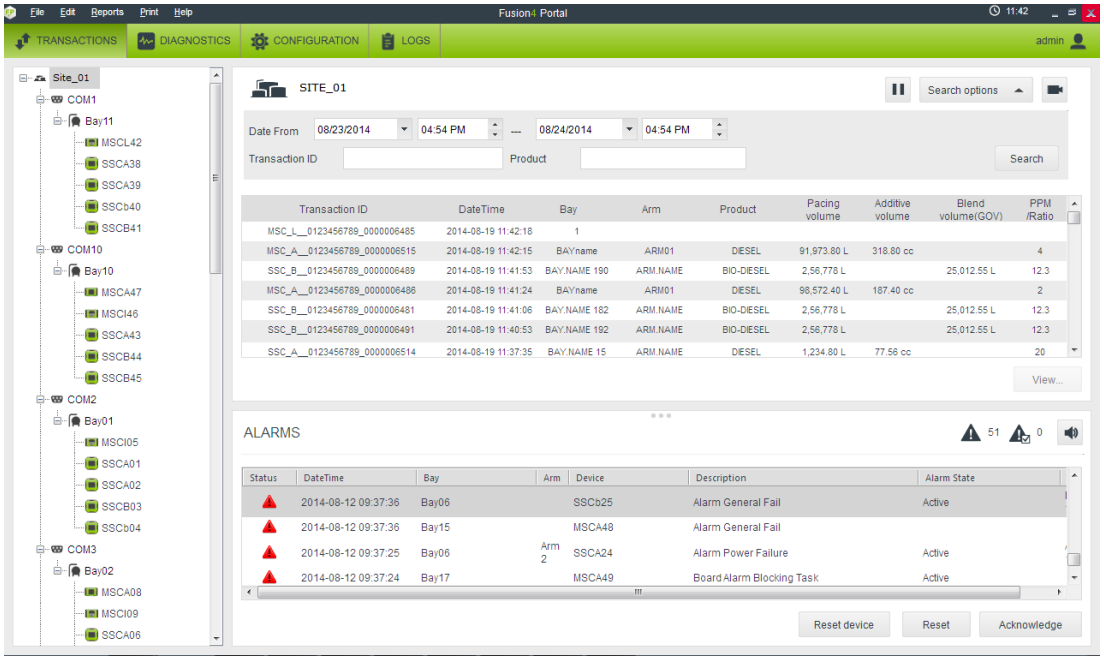
1. In Fusion4 Portal, click the Transactions tab.

   The Transactions panel is displayed.



2. Click  to disable the Auto Refresh option.

   The Search options become available.



3. In the Date From entry fields, select the start date and enter the start time of the period for which you want to view completed transactions.

- You can select the start date by clicking the “arrow down” button and then selecting the date from the pop-up calendar. Use the “arrow left” button and the “arrow right” button to go the previous or next month respectively.
- You can specify the start time by entering the time using the keyboard. You can also use the “arrow up” button and the “arrow down” button to change the time.

4. In the To entry fields, select the end date and enter the end time of the period for which you want to view completed transactions.
   - You can select the end date by clicking the “arrow down” button and then selecting the date from the pop-up calendar. Use the “arrow left” button and the “arrow right” button to go the previous or next month respectively.
   - You can specify the end time by entering the time using your keyboard. You can also use the “arrow up” button and the “arrow down” button to change the time.

   > NOTE: The search period of time between the start date and time and the end date and time can be maximum one month.
   >
   > The retention period of time for completed transactions is one year, i.e. you can search for transactions that were completed maximum one year ago.

5. If you are searching for a specific completed transaction and you know the ID of this transaction, enter the ID in the Transaction ID entry field.

   > NOTE: You can use ‘?’ (substitutes one character) and ‘*’ (substitutes any number of characters) as wild cards in your search.

6. If you are searching for transactions that involved the transfer of a specific product, enter the product name in the Product entry field.

   > NOTE: You can use ‘?’ (substitutes one character) and ‘*’ (substitutes any number of characters) as wild cards in your search.

7. Click View Transactions.

All transactions that were completed within the selected time period and that match the search criteria are displayed in the list of transactions.

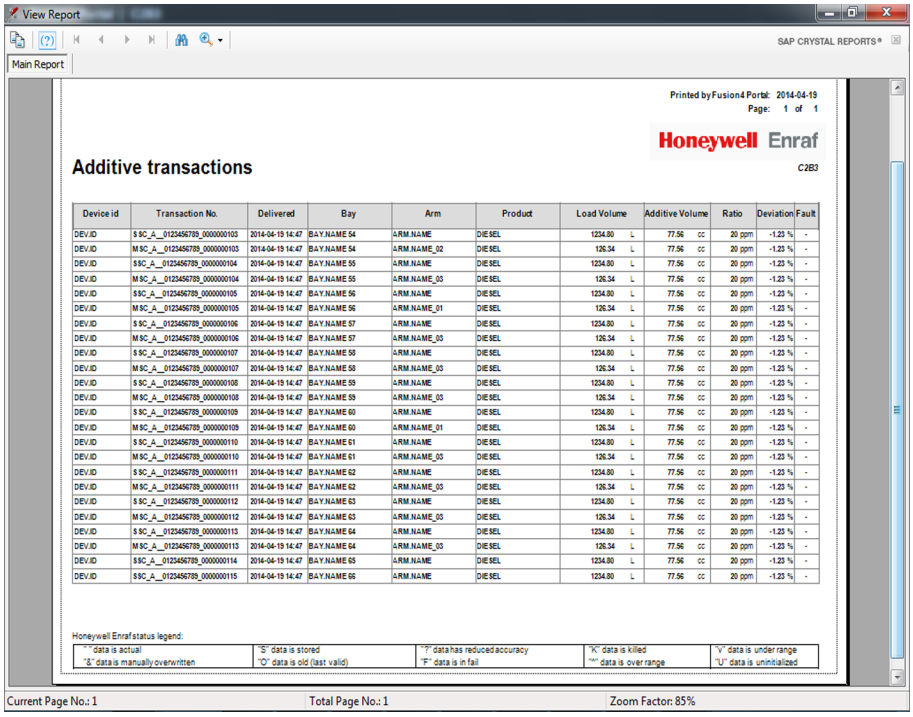
8. From the list of transactions select the transaction you want to view.

   The selected transaction is highlighted.

> NOTE: You can select more than one transaction at a time. When selecting more than one transaction keep the following in mind: You can view/print 25 SSC-A and/or MSC-A transactions or one Bill of Lading (1010CB, SSC-B, MSC-L) at a time. To select two or more transactions, press and hold the [Ctrl] key on your keyboard and select the transactions. To select two or more successive transactions, you can also press and hold the [Shift] key on your keyboard and select the first and the last transaction. To select all transactions in the list press and hold the [Ctrl] key and subsequently press [A] on your keyboard.

9. Click View.

   The details of the selected transaction(s) are displayed in the View Report window.



10. Click  to close the View Report window. You will return to the Fusion4 Portal.

10.3 Monitoring Alarms

Fusion4 Portal features an alarm panel that enables you to monitor the alarms that are detected on the connected devices.

The Alarm panel can be divided into two sections:

- List of active alarms
- Alarm control buttons

10.3.1 List of Active Alarms

The Alarm panel displays a list of active alarms in chronological order with the newest alarms on top of the list.

For each alarm that is listed in the active alarm list the following details are displayed (see).

> NOTE: Fusion4 Portal displays only alarms that are detected on Fusion4 devices, i.e. SSC-As, SSC-Bs, MSC-As, and MSC-Ls.

Table 10-1: Description of alarm details

Item	Description
Status	 Alarm asserted (Active)  Alarm reset requested  Alarm acknowledged  Alarm acknowledge requested
Date and time	Displays the date (Year-Month-Day) and time (Hour:Minutes:Seconds) the alarm was detected on the device.
Bay	Displays the name of the loading bay associated with the device on which the alarm was detected. The displayed name is the name as configured in Fusion4 Portal.

Item	Description
Arm	Displays the number of the loading arm associated with the device on which the alarm was detected. The displayed number is the number as configured in Fusion4 Portal.
Device	Displays the name of the device on which the alarm was detected. The displayed name is the name as configured in Fusion4 Portal.
Description	Displays a description of the alarm like device communication alarms and alarm which has occurred on the device (like device alarm and stream alarms). In case of a device communication alarm due to an invalid or no response from a device or an invalid or lost connection with a device, serial line or Ethernet port, Fusion4 Portal displays one of the following descriptions (in English): • 1. Communication error NOTE: This results from line noise or line problems. • 2. Time out NOTE: This results from line failure or device problems. • 3. Connection error NOTE: This results from terminal server or port failure. NOTE: Communications alarms are displayed in the English language, irrespective of the language that was selected in the device. All other alarms are displayed in the language selected in the device.

Item	Description
Alarm State	Displays the current state of the alarm: • Active This alarm state indicates that the alarm is active. • Acknowledged This alarm state indicates that the alarm has been acknowledged • Request Acknowledge This alarm state indicates that a request for acknowledgment of the alarm is pending • Request Reset This alarm state indicates that a request for reset of the alarm is pending NOTE: The alarm states 'Active' and 'Acknowledged' originate from the device and follow the language that is selected in the device. The alarm states 'Request Acknowledge' and 'Request Reset' are in English irrespective of the language that was selected in the device.
Stream	Displays the name of the stream associated with the device on which the alarm was detected. For example: AddStrm1, AddStrm2, ProdStrm1, ProdStrm2

10.3.2 Alarm Control Buttons

The following table describes the alarm control buttons.

Button	Description
Alarm Counters	 Displays the number of active alarms on the Alarm panel.  Displays the number of acknowledged alarms on the Alarm panel.

Alarm Annunciation	 Enables or disables audio annunciation. When audio annunciation is enabled, a beep sounds from the computer when a new alarm is detected.
Reset device	Resets the alarm or alarms that were selected in the list of active alarms, and all other alarms detected on the device(s) associated with the selected alarm(s). The name of the device associated with an alarm is displayed in the column 'Device name'.
Reset stream	Resets the alarm or alarms that were selected in the list of active alarms, and all other alarms detected on the stream associated with the selected alarm(s). The name of the stream associated with an alarm is displayed in the column 'Stream'.
Reset	Resets the alarm or alarms that were selected in the list of active alarms.
Acknowledge	Acknowledges the alarm or alarms that were selected in the list of active alarms.

10.4 Live Viewer

You can view the loading details of the Fusion4 devices, which are connected via Serial or Ethernet ports, to the Fusion4 Portal machine.

The live viewer replicates the loading details of the device screen, thereby enabling you to remotely monitor the device.

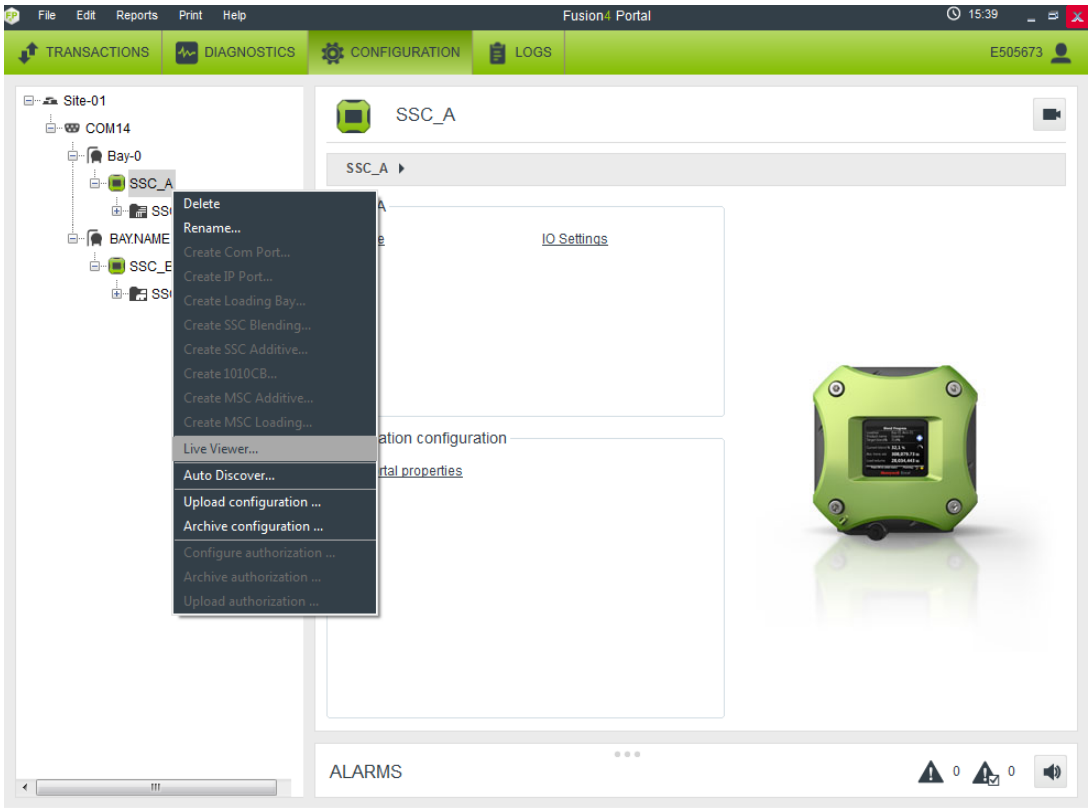
NOTES

- The Live Viewer feature is applicable only for Fusion4 devices, and not for 1010CB device.
- The Live Viewer feature is available only if the auto-discover operation is performed.
- Guidant recommends you to use the Live Viewer feature when the value of the baud rate is 9600 or more.
- Only one instance of Live Viewer can be viewed at a time.

10.4.1 Viewing loading details of SSC-A

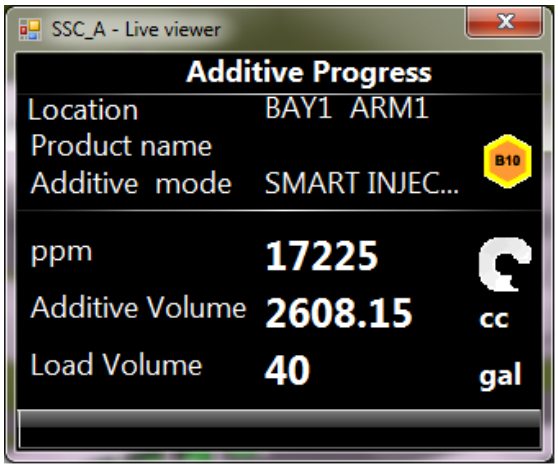
1. Start Fusion4 Portal.
2. In the site tree, select the name of the SSC-A device whose details you want to view.

   The following window is displayed.



3. Right-click the device and then click Live Viewer.

   The Live Viewer dialog box is displayed.



   The following details are displayed.

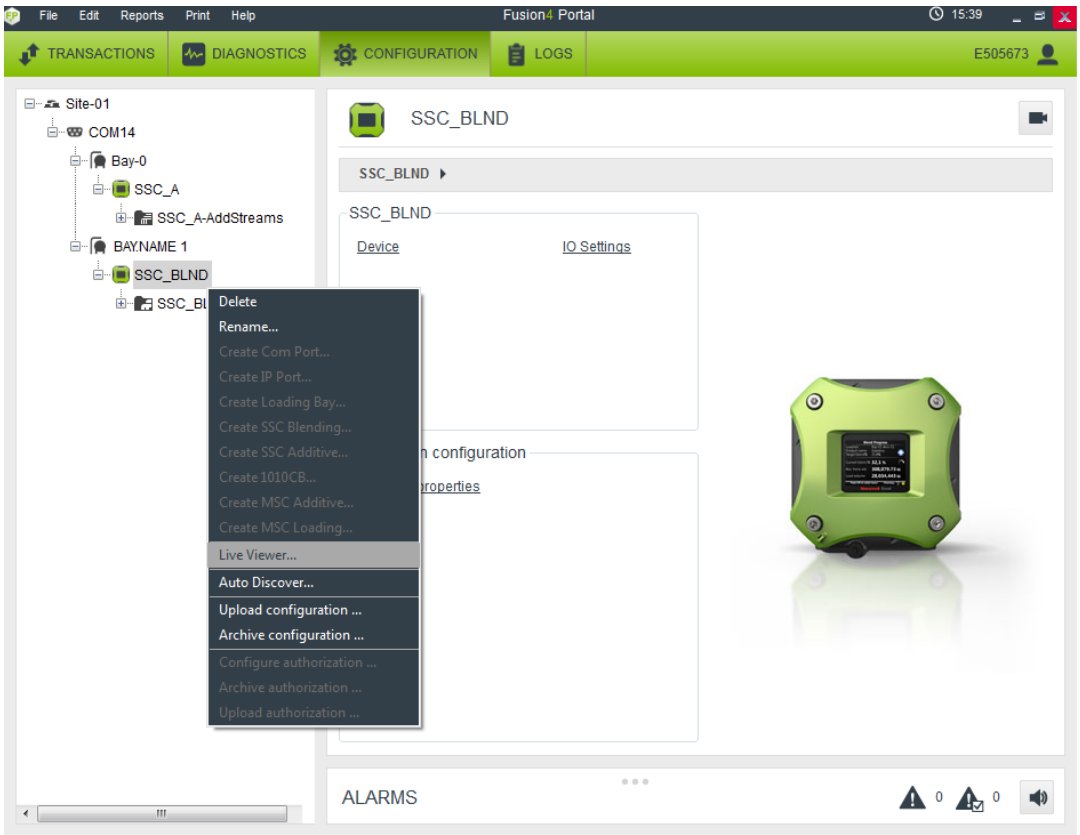
   - Compartment: The trailer compartment associated with this batch.
   - Recipe name: The recipe used during the batch (name, blend %, API symbol).

- Load GOV: The gross observed volume of the finished product being loaded.
- Remaining qty: The remaining quality of the finished product that is yet to be loaded.
- Flow rate: The actual flow rate.

10.4.2 Viewing loading details of SSC-B

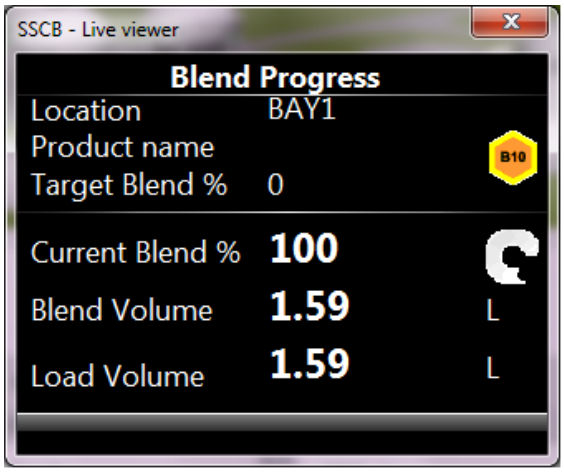
1. Start Fusion4 Portal.
2. In the site tree, select the name of the SSC-B device whose details you want to view.

   The following window is displayed.



3. Right-click the device and then click Live Viewer.

   The Live Viewer window is displayed.



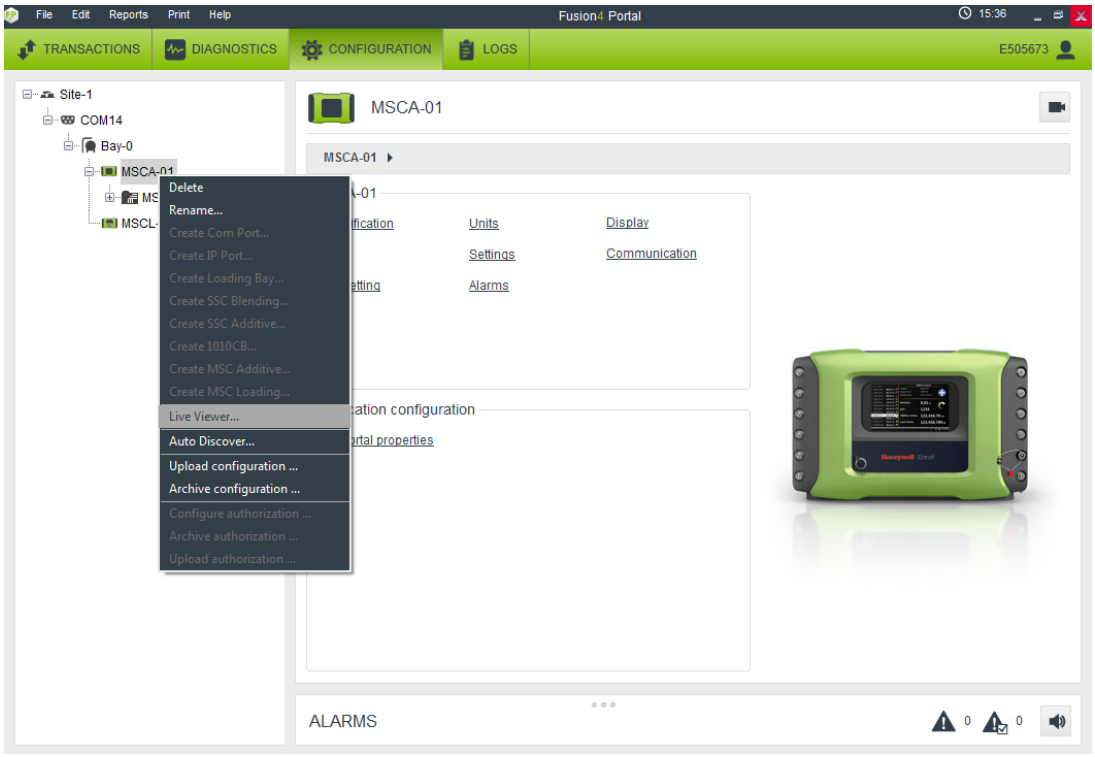
The following details are displayed.

- Location: The location in the site where the SSC-B device is installed.
- Product name: The icon of the product being loaded.
- Target Blend %: The desired percentage of target blend for the loaded product.
- Current Blend %: The actual percentage of current blend for the loaded product.
- Blend Volume: The gross observed volume of blended product.
- Load Volume: The gross observed volume of loaded product.

10.4.3 Viewing loading details of MSC-A

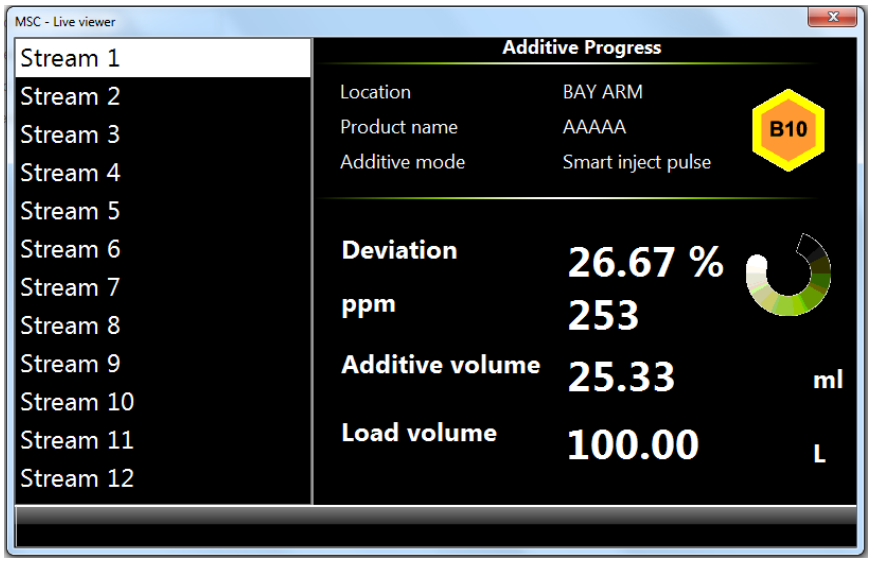
1. Start Fusion4 Portal.
2. In the site tree, select the name of the MSC-A device whose details you want to view.

   The following window is displayed.



3. Right-click the device and then click Live Viewer.

   The Live Viewer dialog box is displayed.



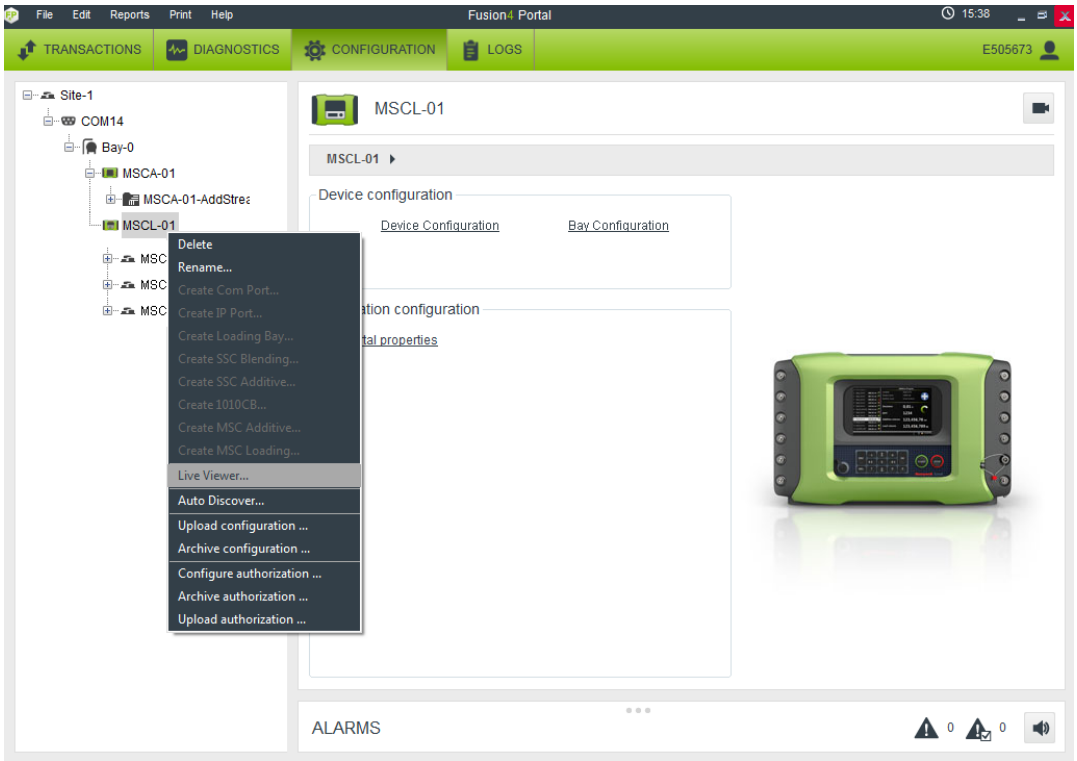
   The following details are displayed.

- Location: The location in the site where the MSC-A device is installed.
- Product name: The icon of the product being loaded.
- Additive mode: The mode in which the additive was injected.
- Deviation: The percentage of deviation from the target additive
- injection volume.
- ppm: The actual calculated parts per million of the additive in the
- final product.
- Additive Volume: The amount of injection volume dispensed per injection cycle.
- Load Volume: The total wild stream volume moved during the transaction.

10.4.4 Viewing loading details of MSC-L

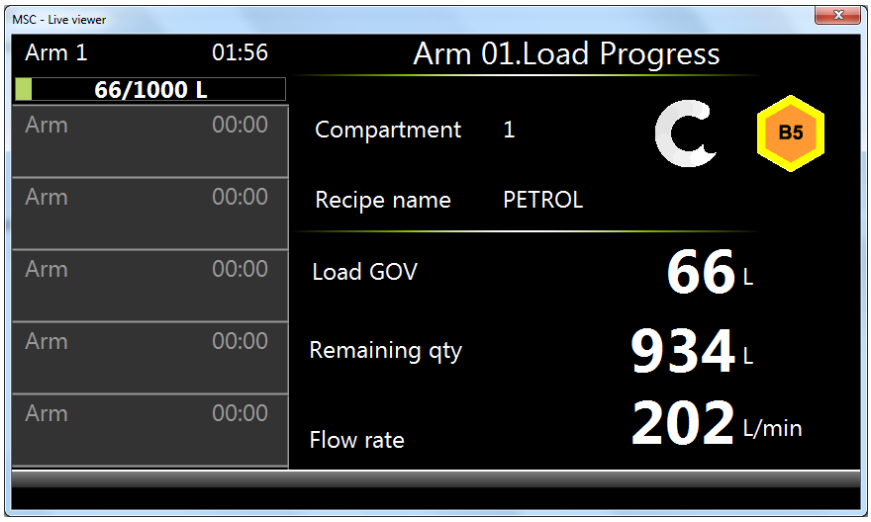
1. Start Fusion4 Portal.
2. In the site tree, select the name of the MSC-L device whose details you want to view.

   The following window is displayed.



3. Right-click the device and then click Live Viewer.

   The Live Viewer dialog box is displayed.



   The following details are displayed.

   - Compartment: The number of the compartment to which the batch was transferred.

- Recipe name: The recipe used during the batch (name, blend %, API symbol).

> NOTE: By default, Load GOV, Remaining qty, and Flow rate parameters along with their respective units configured in the MSC-L device are displayed. However, you can configure the last 3 operation parameters displayed on the Live Viewer screen in the MSC-L device.

11 Print Module

11.1 Printing BoL

You can view and/or print a report using this option. When you choose to print, the report is printed using the default printer configured for the user. However, you can change the printer using which you want to print the reports.

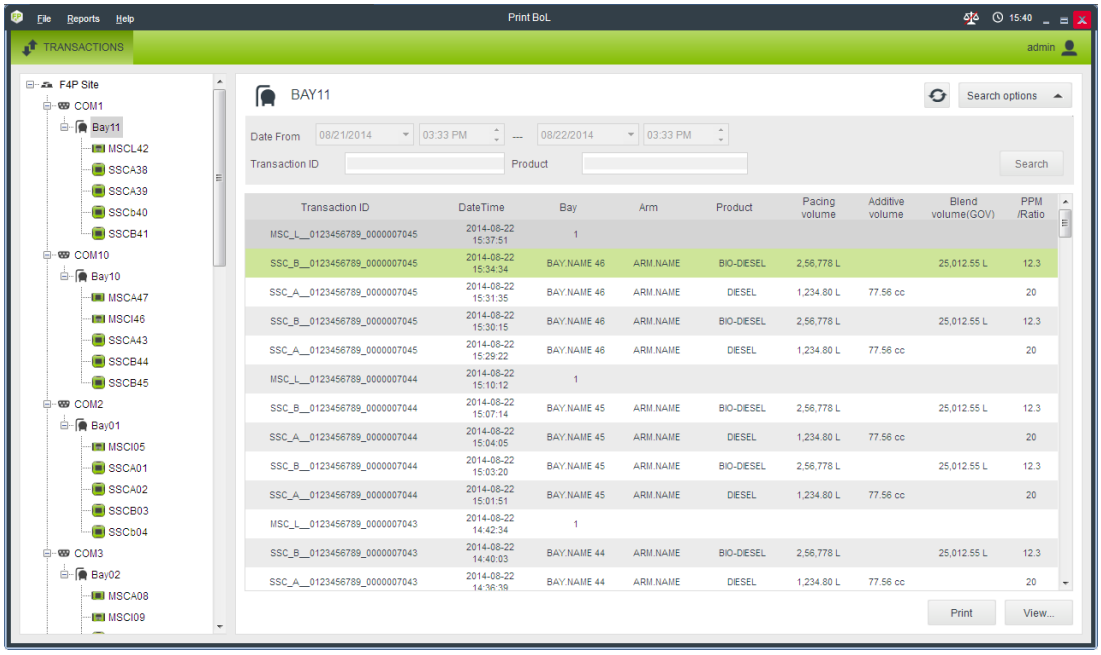
Perform the following steps:

1. Choose Start > All Programs > Enraf > Fusion4 Portal.

   The Fusion4 Portal window is displayed.

2. Choose Print > Print BoL.

   The Print BoL window is displayed.



   When you select a transaction, the Print option is enabled.

3. Choose File > Print.

   The Print dialog box is displayed.

4. From the Name drop-down list, select the printer using which you want to print the BOL reports.
5. Click OK.

   The selected printer is considered as the default printer for printing the BOL reports.

11.2 Transactions in Print BoL

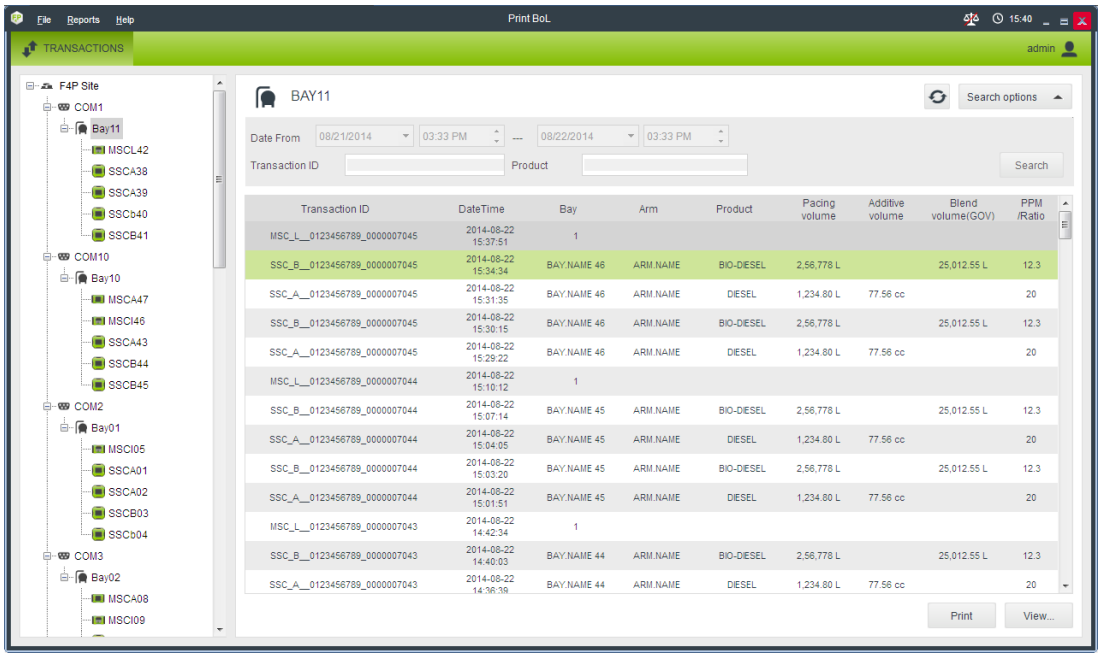
The Print BoL application enables you to view and print completed transactions that are a stored on the hard disk. By default, if a transaction is completed it is automatically displayed in the list of transactions. However, you can also search for transactions that were completed on a specific date or within a specific period of time, and/or that match certain search criteria.

11.2.1 Viewing/Printing transactions

To view and print a transaction that is retrieved from the Fusion4 Portal application, perform the following steps:

1. Start Print BoL.
   a. From the Start menu, select All Programs | Enraf | Print BoL.

      The Print BoL main window is displayed.



2. In the site tree panel, select the site, COM port, IP port, loading bay, or device (1010 CB, SSC-A, SSC-B, MSC-A, MSC-L) for which you want to view the completed transactions.

   The name of the site, COM port, loading bay, or device is highlighted. For the selected site, COM port, loading bay or device the completed transactions are displayed in the list of transactions. Transactions that were completed within the last 24 hours are displayed by default.

3. To view the details of a transaction:

   a. From the list of transactions, select the transaction for which you want to view the details.

      The selected transaction is highlighted.

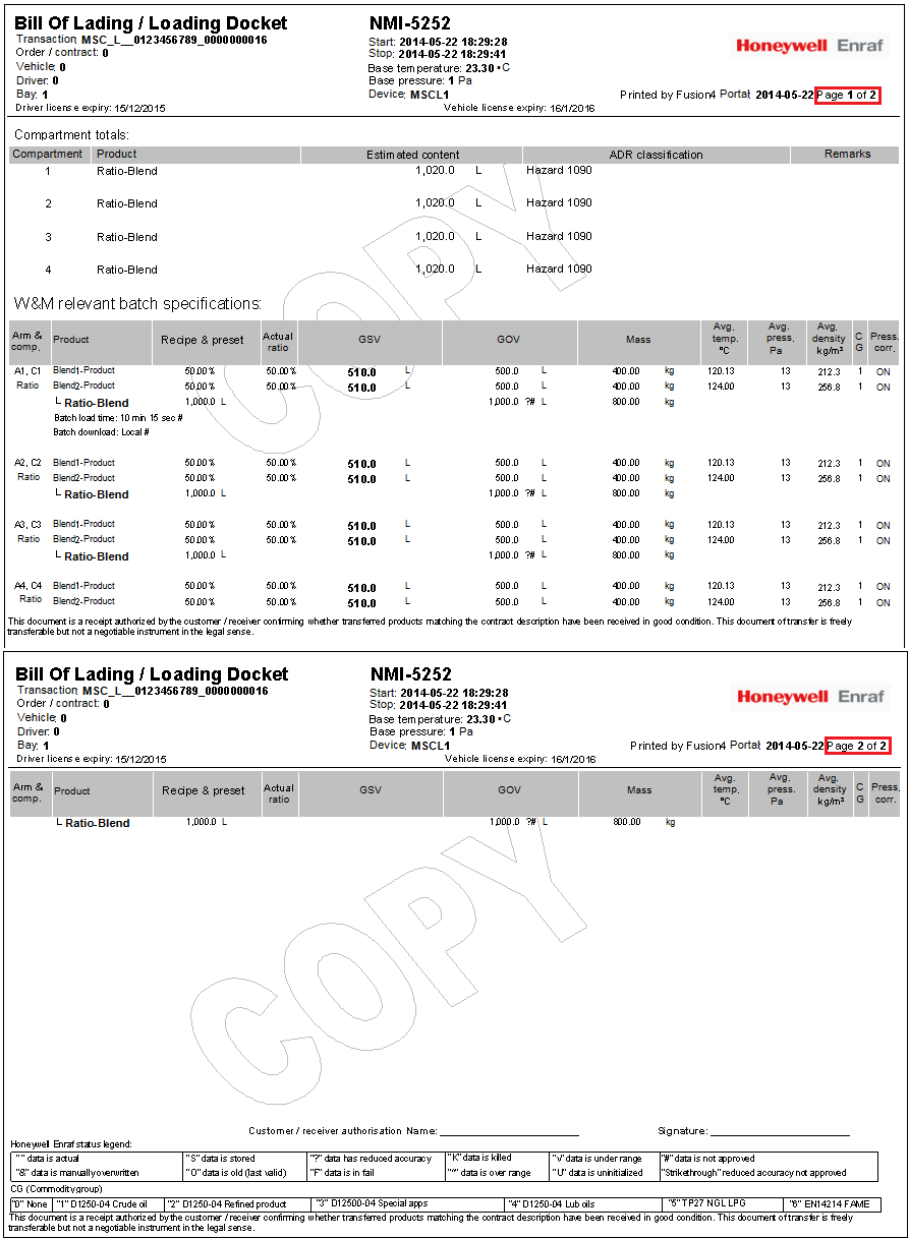
      > NOTE: You can select more than one transaction at a time. When selecting more than one transaction keep the following in mind: You can view/print 25 SSC-A and/or MSC-A transactions or one Bill of Lading (1010CB, SSC-B, MSC-L) at a time. To select two or more transactions, press and hold the [Ctrl] key on your keyboard and select the transactions. To select two or more successive transactions, you can also press and hold the [Shift] key on your keyboard and select the first and

> the last transaction. To select all transactions in the list press and hold the [Ctrl] key and subsequently press [A] on your keyboard.

b. Click View.

The details of the selected transaction(s) are displayed in the View Report window.

The following figure represents the first and second pages of the BOL report.



Bill Of Lading / Loading Docket
Transaction: MSC_L__0123456789_0000000016
Order / contract: 0
Vehicle: 0
Driver: 0
Bay: 1
Driver licens e expiry: 15/12/2015

NMI-5252
Start: 2014-05-22 18:29:28
Stop: 2014-05-22 18:29:41
Base temperature: 23.30 °C
Base pressure: 1 Pa
Device: MSCL1
Vehicle license expiry: 16/1/2016

Honeywell Enraf

Printed by Fusion4 Portal 2014-05-22 Page 1 of 2

Compartment totals:

Compartment	Product	Estimated content	ADR classification	Remarks
1	Ratio-Blend	1,020.0 L	Hazard 1090	
2	Ratio-Blend	1,020.0 L	Hazard 1090	
3	Ratio-Blend	1,020.0 L	Hazard 1090	
4	Ratio-Blend	1,020.0 L	Hazard 1090	

W&M relevant batch specifications:

Arm & comp.	Product	Recipe & preset	Actual ratio	GSV	GOV	Mass	Avg. temp. °C	Avg. press. Pa	Avg. density kg/m³	C G	Press. corr.
A1, C1	Blend1-Product	50.00 %	50.00 %	510.0 L	500.0 L	400.00 kg	120.13	13	212.3	1	ON
Ratio	Blend2-Product	50.00 %	50.00 %	510.0 L	500.0 L	400.00 kg	124.00	13	256.8	1	ON
	└ Ratio-Blend	1,000.0 L			1,000.0 ?# L	800.00 kg					
	Batch load time: 10 min 15 sec #										
	Batch download: Local #										
A2, C2	Blend1-Product	50.00 %	50.00 %	510.0 L	500.0 L	400.00 kg	120.13	13	212.3	1	ON
Ratio	Blend2-Product	50.00 %	50.00 %	510.0 L	500.0 L	400.00 kg	124.00	13	256.8	1	ON
	└ Ratio-Blend	1,000.0 L			1,000.0 ?# L	800.00 kg					
A3, C3	Blend1-Product	50.00 %	50.00 %	510.0 L	500.0 L	400.00 kg	120.13	13	212.3	1	ON
Ratio	Blend2-Product	50.00 %	50.00 %	510.0 L	500.0 L	400.00 kg	124.00	13	256.8	1	ON
	└ Ratio-Blend	1,000.0 L			1,000.0 ?# L	800.00 kg					
A4, C4	Blend1-Product	50.00 %	50.00 %	510.0 L	500.0 L	400.00 kg	120.13	13	212.3	1	ON
Ratio	Blend2-Product	50.00 %	50.00 %	510.0 L	500.0 L	400.00 kg	124.00	13	256.8	1	ON

This document is a receipt authorized by the customer / receiver confirming whether transferred products matching the contract description have been received in good condition. This document of transfer is freely transferable but not a negotiable instrument in the legal sense.

Bill Of Lading / Loading Docket
Transaction: MSC_L__0123456789_0000000016
Order / contract: 0
Vehicle: 0
Driver: 0
Bay: 1
Driver licens e expiry: 15/12/2015

NMI-5252
Start: 2014-05-22 18:29:28
Stop: 2014-05-22 18:29:41
Base temperature: 23.30 °C
Base pressure: 1 Pa
Device: MSCL1
Vehicle license expiry: 16/1/2016

Honeywell Enraf

Printed by Fusion4 Portal 2014-05-22 Page 2 of 2

Arm & comp.	Product	Recipe & preset	Actual ratio	GSV	GOV	Mass	Avg. temp. °C	Avg. press. Pa	Avg. density kg/m³	C G	Press. corr.
	└ Ratio-Blend	1,000.0 L			1,000.0 ?# L	800.00 kg					

Customer / receiver authorisation Name: _____ Signature: _____

Honeywell Enraf status legend:

" " data is actual	"S" data is stored	"?" data has reduced accuracy	"K" data is killed	"v" data is under range	"#" data is not approved
"8" data is manually overwritten	"O" data is old (last valid)	"F" data is in fail	"^" data is over range	"U" data is uninitialized	"Strikethrough" reduced accuracy not approved

CG (Commodity group)

"0" None	"1" D1250-04 Crude oil	"2" D1250-04 Refined product	"3" D12500-04 Special apps	"4" D1250-04 Lub oils	"5" TP27 NGL LPG	"6" EN14214 FAME

This document is a receipt authorized by the customer / receiver confirming whether transferred products matching the contract description have been received in good condition. This document of transfer is freely transferable but not a negotiable instrument in the legal sense.

4. Click to close the View Report window. You will return to the Fusion4 Portal application.
5. Click Print to print the details of the selected transaction.

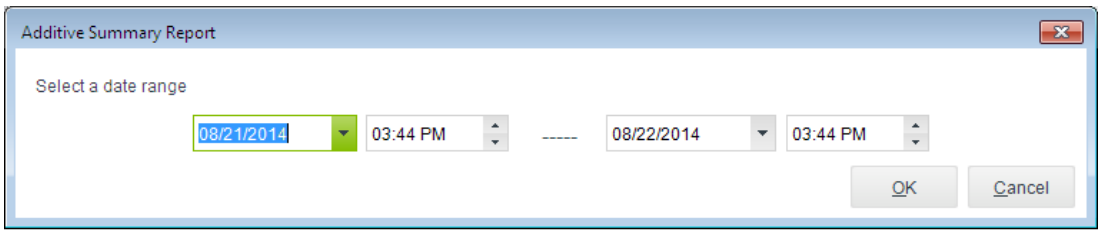
11.2.2 Viewing/Printing Additive Summary Reports

You can view additive summary reports using the Fusion4 Portal and/or Print BoL applications.

To view the additive summary reports, perform the following steps:

1. Choose Reports > Additive Summary Report.

   The Additive Summary Report dialog box is displayed.



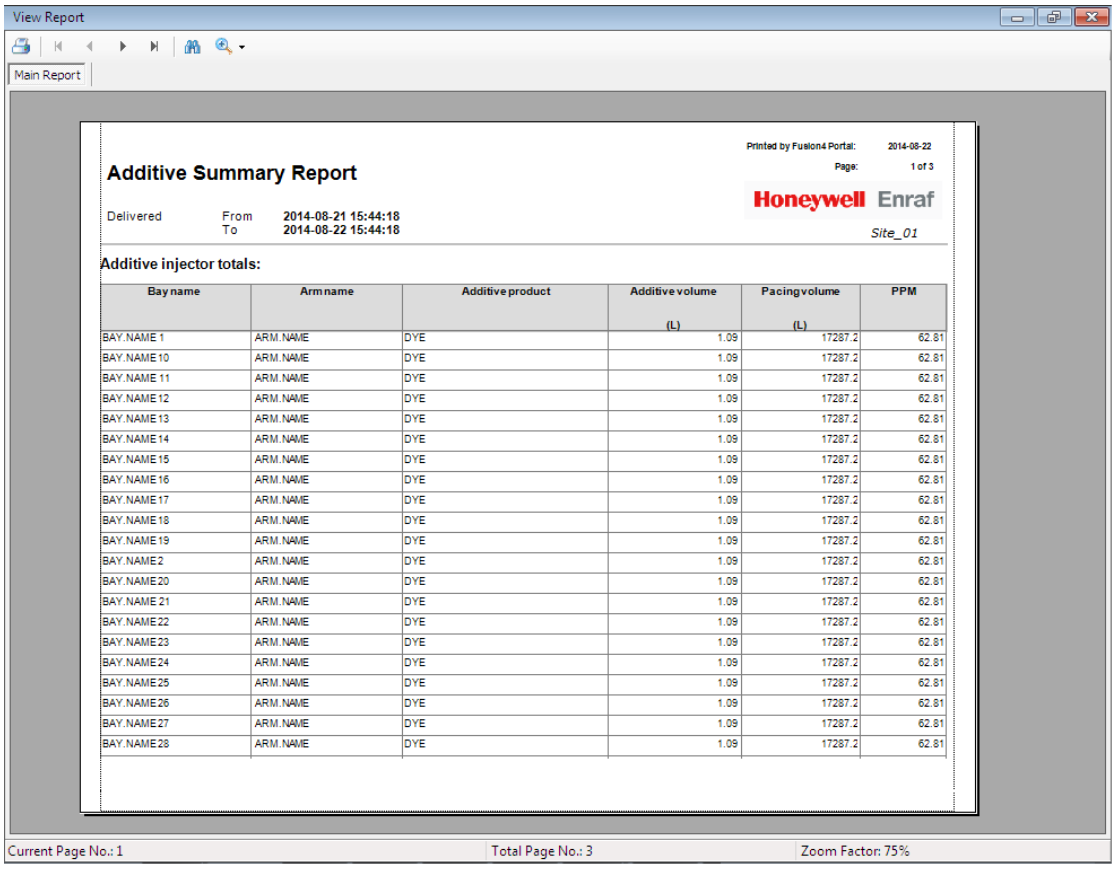
2. Under Select a date range, elect the start and end dates and also select the start and end time for which you want to view additive summary reports.

   - You can select the date by clicking the “arrow down” button and then selecting the date from the pop-up calendar. Use the “arrow left” button and the “arrow right” button to go the previous or next month respectively.
   - You can specify the time by entering the time using the keyboard. You can also use the “arrow up” button and the “arrow down” button to change the time.

   > NOTE: The search period of time between the start date and time and the end date and time can be maximum one month.
   >
   > The retention period of time for reports is one year, i.e. you can search for reports that were completed maximum one year ago.

3. Click OK.

The additive summary report is displayed in the View Report window.



Bay name	Arm name	Additive product	Additive volume (L)	Pacing volume (L)	PPM
BAY.NAME 1	ARM.NAME	DYE	1.09	17287.2	62.81
BAY.NAME 10	ARM.NAME	DYE	1.09	17287.2	62.81
BAY.NAME 11	ARM.NAME	DYE	1.09	17287.2	62.81
BAY.NAME 12	ARM.NAME	DYE	1.09	17287.2	62.81
BAY.NAME 13	ARM.NAME	DYE	1.09	17287.2	62.81
BAY.NAME 14	ARM.NAME	DYE	1.09	17287.2	62.81
BAY.NAME 15	ARM.NAME	DYE	1.09	17287.2	62.81
BAY.NAME 16	ARM.NAME	DYE	1.09	17287.2	62.81
BAY.NAME 17	ARM.NAME	DYE	1.09	17287.2	62.81
BAY.NAME 18	ARM.NAME	DYE	1.09	17287.2	62.81
BAY.NAME 19	ARM.NAME	DYE	1.09	17287.2	62.81
BAY.NAME 2	ARM.NAME	DYE	1.09	17287.2	62.81
BAY.NAME 20	ARM.NAME	DYE	1.09	17287.2	62.81
BAY.NAME 21	ARM.NAME	DYE	1.09	17287.2	62.81
BAY.NAME 22	ARM.NAME	DYE	1.09	17287.2	62.81
BAY.NAME 23	ARM.NAME	DYE	1.09	17287.2	62.81
BAY.NAME 24	ARM.NAME	DYE	1.09	17287.2	62.81
BAY.NAME 25	ARM.NAME	DYE	1.09	17287.2	62.81
BAY.NAME 26	ARM.NAME	DYE	1.09	17287.2	62.81
BAY.NAME 27	ARM.NAME	DYE	1.09	17287.2	62.81
BAY.NAME 28	ARM.NAME	DYE	1.09	17287.2	62.81

- Click  to print the additive summary report.
- Click  to close the View Report window. You will return to Fusion4 Portal.

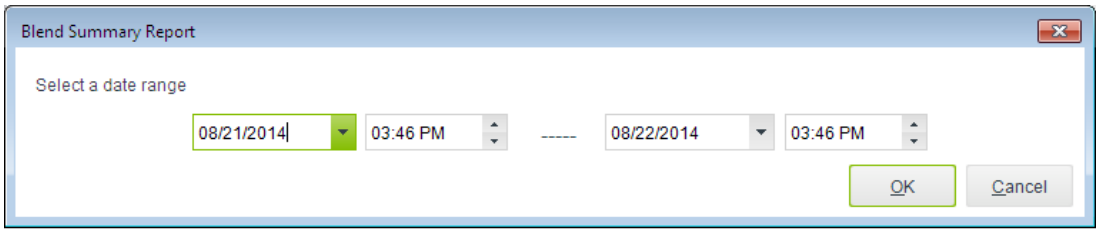
11.2.3 Viewing/Printing Blend Summary Report

You can view blend summary reports using the Fusion4 Portal and/or Print BoL applications.

To view the blend summary reports, perform the following steps:

1. Choose Reports > Blend Summary Report.

   The Blend Summary Report dialog box is displayed.



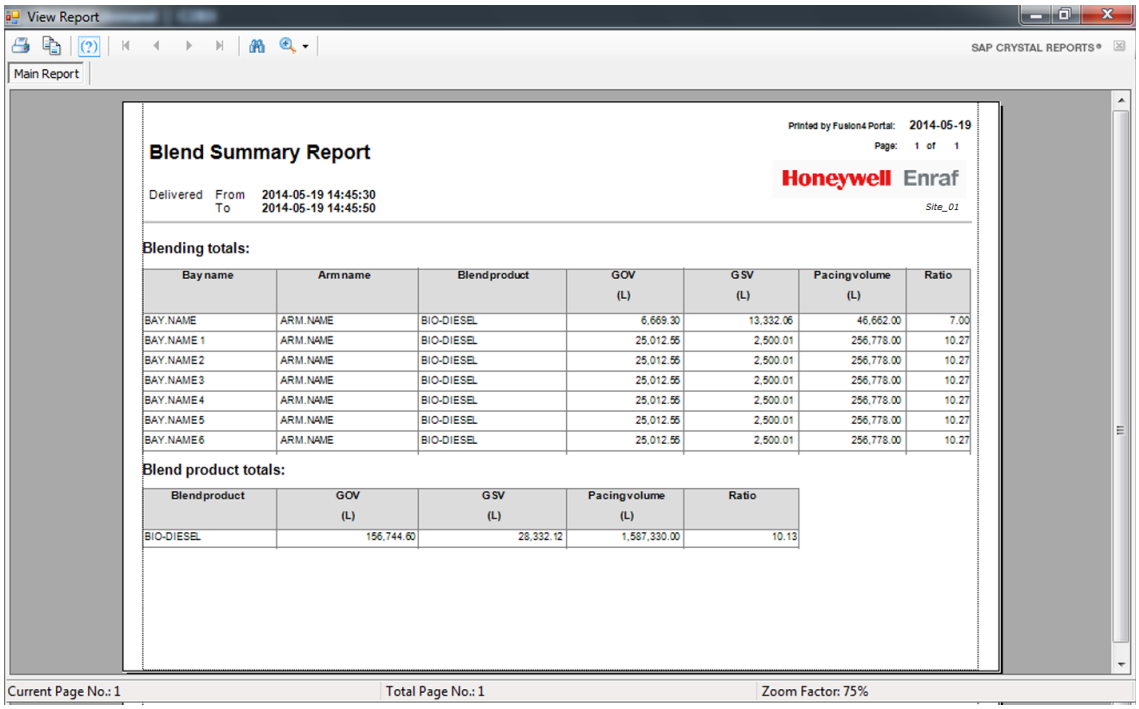
2. Under Select a date range, select the start and end dates and also select the start and end time for which you want to view blend summary reports.

   - You can select the date by clicking the “arrow down” button and then selecting the date from the pop-up calendar. Use the “arrow left” button and the “arrow right” button to go the previous or next month respectively.
   - You can specify the time by entering the time using the keyboard. You can also use the “arrow up” button and the “arrow down” button to change the time.

   > NOTE: The search period of time between the start date and time and the end date and time can be maximum one month.
   >
   > The retention period of time for reports is one year, i.e. you can search for reports that were completed maximum one year ago.

3. Click OK.

   The blend summary report is displayed in the View Report window.



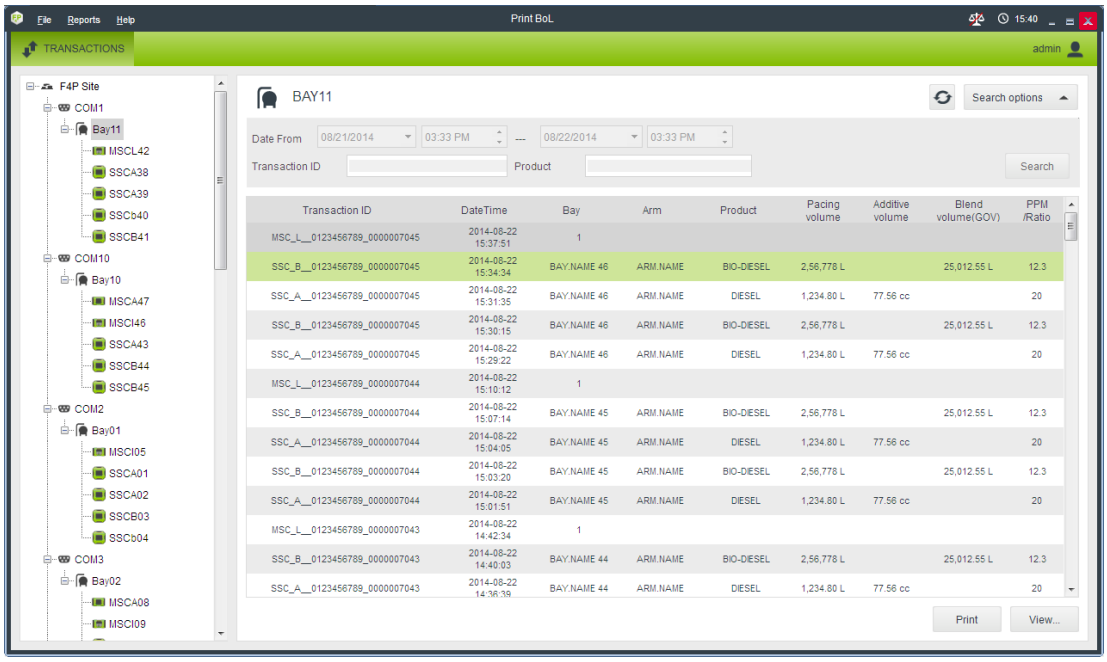
- Click  to print the blend summary report.
- Click  to close the View Report window. You will return to Fusion4 Portal.

11.2.4 Searching for Retrieved Transactions

The Print BoL application enables you to search for transactions that were completed and stored on hard disk on a specific date or within a specific period of time, and that match certain search criteria. Subsequently, you can view and print the details of these transactions.

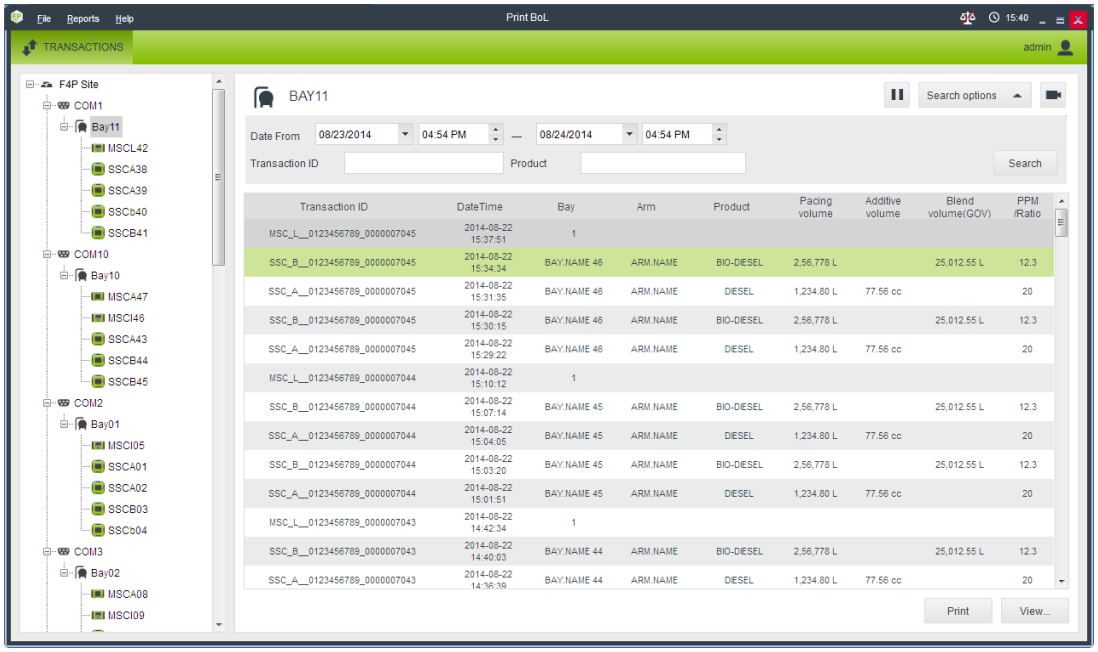
1. Start Print BoL.

   The Print BoL window is displayed.



2. Click  to automatically refresh the search options.

   The Search options become available.



3. In the Date From entry fields, select the start date and enter the start time of the time period for which you want to view the completed and stored transactions.

- You can select the start date by clicking the “arrow down” button and then selecting the date from the pop-up calendar. Use the “arrow left” button and the “arrow right” button to go the previous or next month respectively.
- You can specify the start time by entering the time using the keyboard. You can also use the “arrow up” button and the “arrow down” button to change the time.

4. In the To entry fields, select the end date and enter the end time of the time period for which you want to view the completed and stored transactions.
   - You can select the end date by clicking the “arrow down” button and then selecting the date from the pop-up calendar. Use the “arrow left” button and the “arrow right” button to go the previous or next month respectively.
   - You can specify the end time by entering the time using your keyboard. You can also use the “arrow up” button and the “arrow down” button to change the time.

   > NOTE: The search period of time between the start date and time and the end date and time can be maximum one month.
   >
   > The retention period of time for completed transactions is one year, i.e. you can search for transactions that were completed and stored maximum one year ago.

5. If you know the ID of the stored transaction that you are searching for, enter this ID in the Transaction ID entry field.
6. If you know which product was transferred during the stored transaction you are searching for, enter the name of this product in the Product entry field.
7. Click View Transactions.

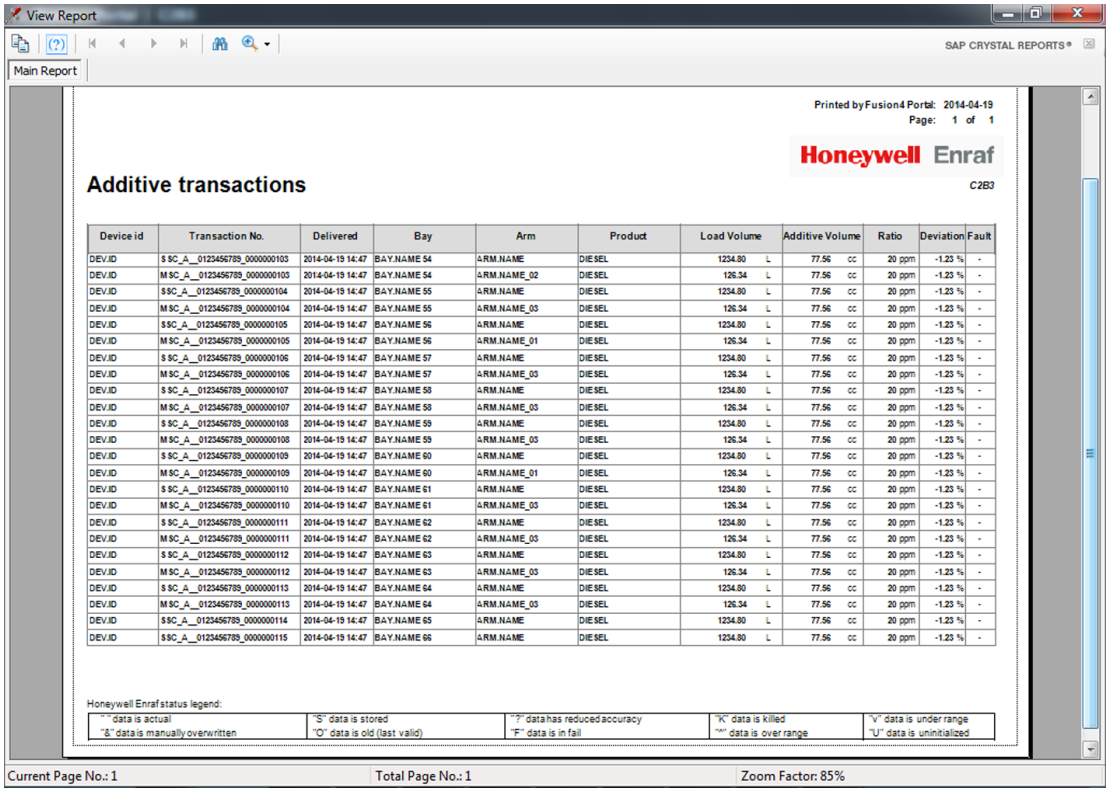
   All completed transactions that were stored on the specified date or within the specified period of time, and that match the search criteria are displayed in the transaction list.
8. From the list of stored transactions select the transaction you want to view.

   The selected transaction is highlighted.

> NOTE: You can select more than one transaction at a time. When selecting more than one transaction keep the following in mind: You can view/print 25 SSC-A and/or MSC-A transactions or one Bill of Lading (1010CB, SSC-B, MSC-L) at a time. To select two or more transactions, press and hold the [Ctrl] key on your keyboard and select the transactions. To select two or more successive transactions, you can also press and hold the [Shift] key on your keyboard and select the first and the last transaction. To select all transactions in the list press and hold the [Ctrl] key and subsequently press [A] on your keyboard.

9. Click View to view the details of the selected transaction(s).

   The details of the selected transaction(s) are displayed in the View Report window.



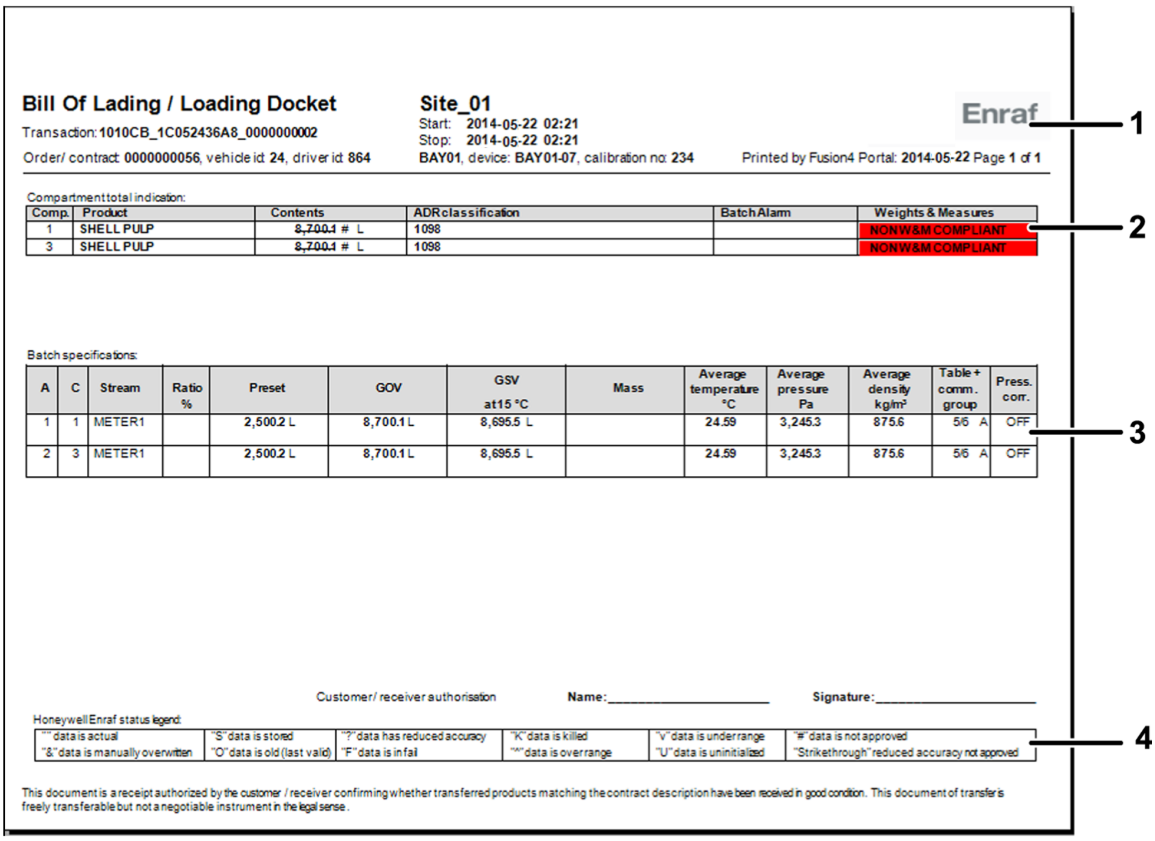
10. Click  to close the View Report window. You will return to the Print BoL window.

11. Click Print to print the details of the selected transactions.

11.3 1010CBBill of Lading

The following figure illustrates a sample Bill of Lading for a 1010CB device.

Figure 1: Example of Bill of Lading for 1010CB



Bill Of Lading / Loading Docket

Transaction: **1010CB_1C052436A8_0000000002**

Order/ contract: **0000000056**, vehicle id: **24**, driver id: **864**

Site_01

Start: **2014-05-22 02:21**

Stop: **2014-05-22 02:21**

BAY01, device: **BAY01-07**, calibration no: **234**

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1

Compartment total indication:

Comp.	Product	Contents	ADR classification	Batch Alarm	Weights & Measures
1	SHELL PULP	8,700.1 # L	1098		NON W&M COMPLIANT
3	SHELL PULP	8,700.1 # L	1098		NON W&M COMPLIANT

2

Batch specifications:

A	C	Stream	Ratio %	Preset	GOV	GSV at 15 °C	Mass	Average temperature °C	Average pressure Pa	Average density kg/m³	Table + comm. group	Press. corr.
1	1	METER1		2,500.2 L	8,700.1 L	8,695.5 L		24.59	3,245.3	875.6	5/6 A	OFF
2	3	METER1		2,500.2 L	8,700.1 L	8,695.5 L		24.59	3,245.3	875.6	5/6 A	OFF

3

Customer/ receiver authorisation **Name:**_____ **Signature:**_____

Honeywell Enraf status legend:

" " data is actual	"S" data is stored	"?" data has reduced accuracy	"K" data is killed	"v" data is under range	"#" data is not approved
"&" data is manually overwritten	"O" data is old (last valid)	"F" data is in fail	"^" data is over range	"U" data is uninitialized	"Strikethrough" reduced accuracy not approved

4

This document is a receipt authorized by the customer / receiver confirming whether transferred products matching the contract description have been received in good condition. This document of transfer is freely transferable but not a negotiable instrument in the legal sense.

1. Bill of Lading header (see Section 11.3.1: Bill of Lading Header)
2. Compartment Total Indication table (see Section 11.3.2: Compartment Total Indication)
3. Batch Specifications table (see Section 11.3.3: Batch Specifications)
4. Status Legend table (see Section 11.3.4: Status Legend)

11.3.1 Bill of Lading Header

The header of the Bill of Lading displays the following information (see the following table):

Table 11-1: Example of information on Bill of Lading Header

Item	Description
[site name]	Displays the name of the site on which the transaction took place.
Transaction	Displays the transaction ID. This ID consists of 28 characters, and comprises the device type followed by a serial number and a unique number.
Order/Contract	Displays the ID of the contract for this transaction.
vehicle id	Displays the ID of vehicle used for the transaction.
driver id	Displays the ID of the driver responsible for the transaction.
Start	Displays the date and time when the transaction started.
Stop	Displays the date and time when the transaction stopped.
[loading bay]	Displays the ID of the loading bay in which the transaction took place.
device	Displays the ID of the device on which the transaction took place.
calibration no.	Displays the calibration number applicable to the transaction.
Printed by Fusion4 Portal	Displays the date on which the BoL was printed.
[page number]	Displays the current page number and page total.

11.3.1.1 BoL Logo

The logo is displayed at the top right-hand side. This logo can be replaced by the logo of your company. Refer to Section 8.10: Replacing the Logo on the Bill of Lading for more information.

11.3.2 Compartment Total Indication

The Compartment total indication table displays for each compartment information about the batch that was transferred during the transaction (see the following table).

Table 11-2: Description of items in Compartment total indication table

Item	Description
Comp.	Displays the number of the compartment to which the batch was transferred.

Item	Description
Product	Displays the name of the product that was transferred.
Contents	Displays the total Gross Observed Volume of the batch or batches that was/were transferred to the compartment.
ADR Classification	Displays the ADR Classification for the batch that was transferred. It consists of: UN number and proper shipping name UN numbers are four-digit numbers that identify hazardous substances and articles. The UN numbers are assigned by the United Nations Committee of Experts on the Transport of Dangerous Goods. Associated with each UN number is a hazard identifier (ADR class) ADR class ADR (Accord européen relatief au transport international de marchandises Dangereuses par Route) is an European agreement concerning the international carriage of dangerous goods by road. The ADR divides dangerous goods into the following classes: • Class 1: Explosive substances and articles • Class 2: Gases • Class 3: Flammable liquids • Class 4.1: Flammable solids, self-reactive substances and solid desensitized explosives • Class 4.2: Substances liable to spontaneous combustion • Class 4.3: Substances which, in contact with water, emit flammable gases • Class 5.1: Oxidizing substances • Class 5.2: Organic peroxides • Class 6.1: Toxic substances • Class 6.2: Infectious substances • Class 7: Radioactive material • Class 8: Corrosive substances • Class 9: Miscellaneous dangerous substances and articles

Item	Description
Batch Alarm	When there is a disturbance during the transfer of a batch to a compartment, the system generates an alarm. The number of this alarm is displayed in the Batch Alarm column (see Section 13.3: Device (1010CB) Error Status Codes).
Weights & Measures	If the system is W&M approved, the Weights & Measures column displays whether the transfer of a batch was W&M compliant or non W&M compliant. If the system is not W&M approved, this column is empty.

11.3.3 Batch Specifications

The table under Batch specifications displays the following information for each batch (the following table).

Table 11-3: Description of items in batch specification table

Item	Description
A	Displays the id of the arm that was used to transfer the product.
C	Displays the compartment to which the product was transferred.
Stream	Displays the name of the main stream or blend stream.
Ratio	Displays the percentage of the blend product in the total transferred stream.
Preset	Displays the preset volume (GOV) or mass.
GOV	Displays the Gross Observed Volume of the product that was transferred, i.e. the real transferred volume, not corrected for temperature or pressure effects on the volume.
GSV	Displays the Gross Standard Volume of the product that was transferred, i.e. the total volume of all liquids corrected by the appropriate volume correction factor for the observed temperature, density and pressure.
Mass	Displays the mass of the product that was transferred.
Average temperature	Displays the average temperature of the product that was transferred.

Item	Description
Average pressure	Displays the average pressure of the liquid during the time that the product was transferred.
Average density	Displays the average density of the product that was transferred.
Table + comm. group	Displays the table name and commodity group that are used for the GSV calculation. The table name refers to used tables or algorithms in an API standard. The following product classes can be distinguished: "-" = No commodity group selected A = Crude oil B = Refined products C = Lubricating oils D = Special applications E = NGL (= natural gas liquid) and LPG (= liquefied petroleum gas) F = Fatty Acid Methyl Esters
Press corr	Displays whether pressure correction was On or Off during the transfer of the product.

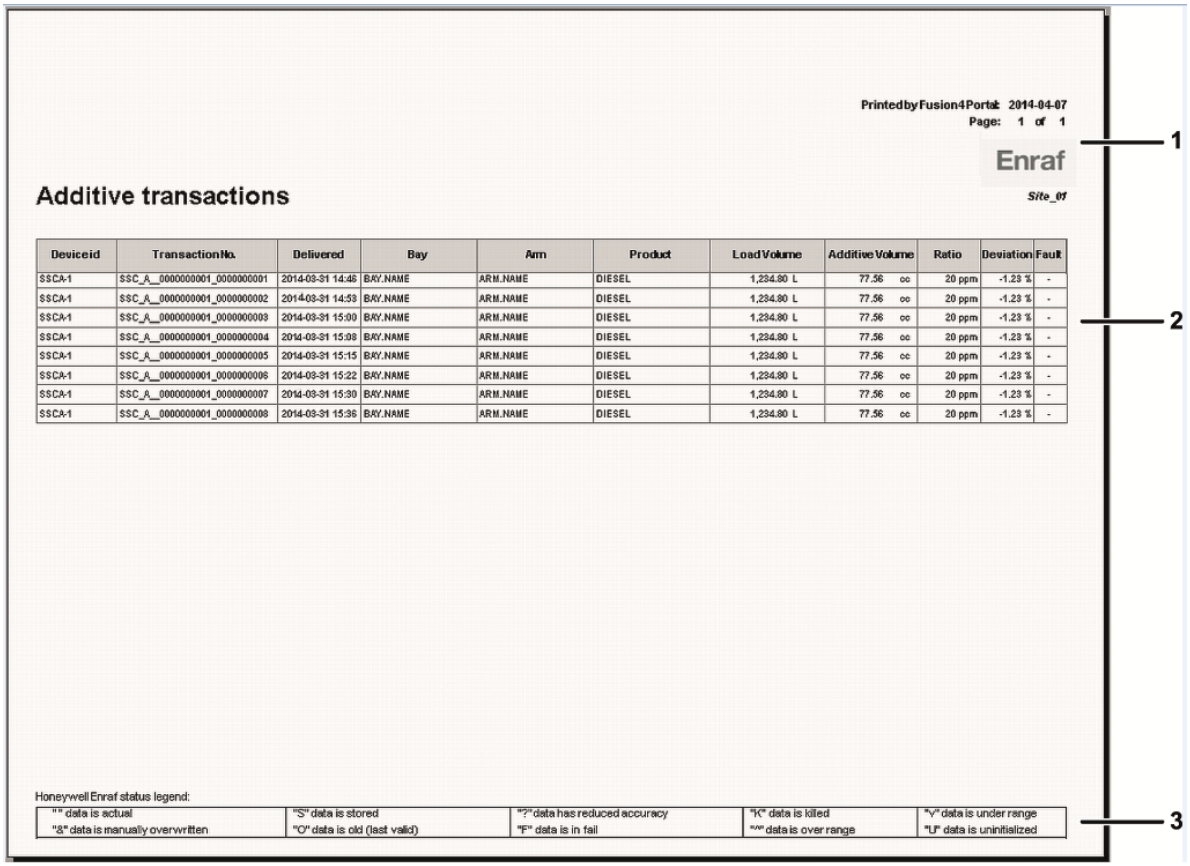
11.3.4 Status Legend

The table under the status legend describes the markings used, if applicable, to indicate the status of the information on the Bill of Lading.

11.4 Additive Transaction Summary

The following figure illustrates a sample additive transaction summary.

Figure 2: Example of Additive transaction summary



DeviceId	TransactionNo.	Delivered	Bay	Arm	Product	Load Volume	Additive Volume	Ratio	Deviation	Fault
SSCA-1	SSC_A__0000000001_0000000001	2014-03-31 14:46	BAY.NAME	ARM.NAME	DIESEL	1,234.80 L	77.56 cc	20 ppm	-1.23 %	-
SSCA-1	SSC_A__0000000001_0000000002	2014-03-31 14:53	BAY.NAME	ARM.NAME	DIESEL	1,234.80 L	77.56 cc	20 ppm	-1.23 %	-
SSCA-1	SSC_A__0000000001_0000000003	2014-03-31 15:00	BAY.NAME	ARM.NAME	DIESEL	1,234.80 L	77.56 cc	20 ppm	-1.23 %	-
SSCA-1	SSC_A__0000000001_0000000004	2014-03-31 15:08	BAY.NAME	ARM.NAME	DIESEL	1,234.80 L	77.56 cc	20 ppm	-1.23 %	-
SSCA-1	SSC_A__0000000001_0000000005	2014-03-31 15:15	BAY.NAME	ARM.NAME	DIESEL	1,234.80 L	77.56 cc	20 ppm	-1.23 %	-
SSCA-1	SSC_A__0000000001_0000000006	2014-03-31 15:22	BAY.NAME	ARM.NAME	DIESEL	1,234.80 L	77.56 cc	20 ppm	-1.23 %	-
SSCA-1	SSC_A__0000000001_0000000007	2014-03-31 15:30	BAY.NAME	ARM.NAME	DIESEL	1,234.80 L	77.56 cc	20 ppm	-1.23 %	-
SSCA-1	SSC_A__0000000001_0000000008	2014-03-31 15:36	BAY.NAME	ARM.NAME	DIESEL	1,234.80 L	77.56 cc	20 ppm	-1.23 %	-

" " data is actual "&" data is manually overwritten	"S" data is stored "O" data is old (last valid)	"?" data has reduced accuracy "F" data is in fail	"K" data is killed "^" data is over range	"V" data is under range "U" data is uninitialized

1. Additive transaction summary header (see Section 11.4.1: List of Transaction Data Header)
2. Additive transactions table (see Section 11.4.2: Additive Transactions)
3. Status Legend table (see Section 11.4.3: Status Legend)

11.4.1 List of Transaction Data Header

The Additive transaction summary header shows the following information (see the following table).

Table 11-4: Description of information on list of transaction data header

Item	Description
Printed by Fusion4 Portal	Displays the date on which the list of transactions was printed.
Page	Displays the current page number and page total.

Item	Description
Site name	Displays the name of the site on which the transaction took place.

11.4.1.1 List of Transaction Data Logo

The logo is displayed at the top right-hand side. This logo can be replaced by the logo of your company. Refer to section for more information.

11.4.2 Additive Transactions

The table under Additive transactions lists the SSC-A transactions that were selected in the Print BoL window. For each transaction, the following information is shown (see the following table).

Table 11-5: Description of items in additive transactions table

Item	Description
Device id	Displays the ID of the SSC-A device that was used for the transaction.
Transaction No.	Displays the transaction ID. This ID consists of 28 characters, and comprises the device type followed by a serial number and a unique number.
Delivered	Displays the date and time when the transaction took place.
Bay	Displays the ID of the loading bay on which the transaction took place.
Arm	Displays the id of the arm that was used to transfer the product.
Product	Displays the name of the product that was transferred.
Load Volume	The total wild (and additive) stream volume moved during the transaction.
Additive Volume	The total observed volume of additive product dispensed during the batch.
Ratio	The actual calculated parts per million of the additive in the final product.
Deviation	The percentage deviation from the target additive injection volume.
Fault	Contains “ERROR” or “-”. For a list of alarms, see the SSC-A Installation and Operation Manual.

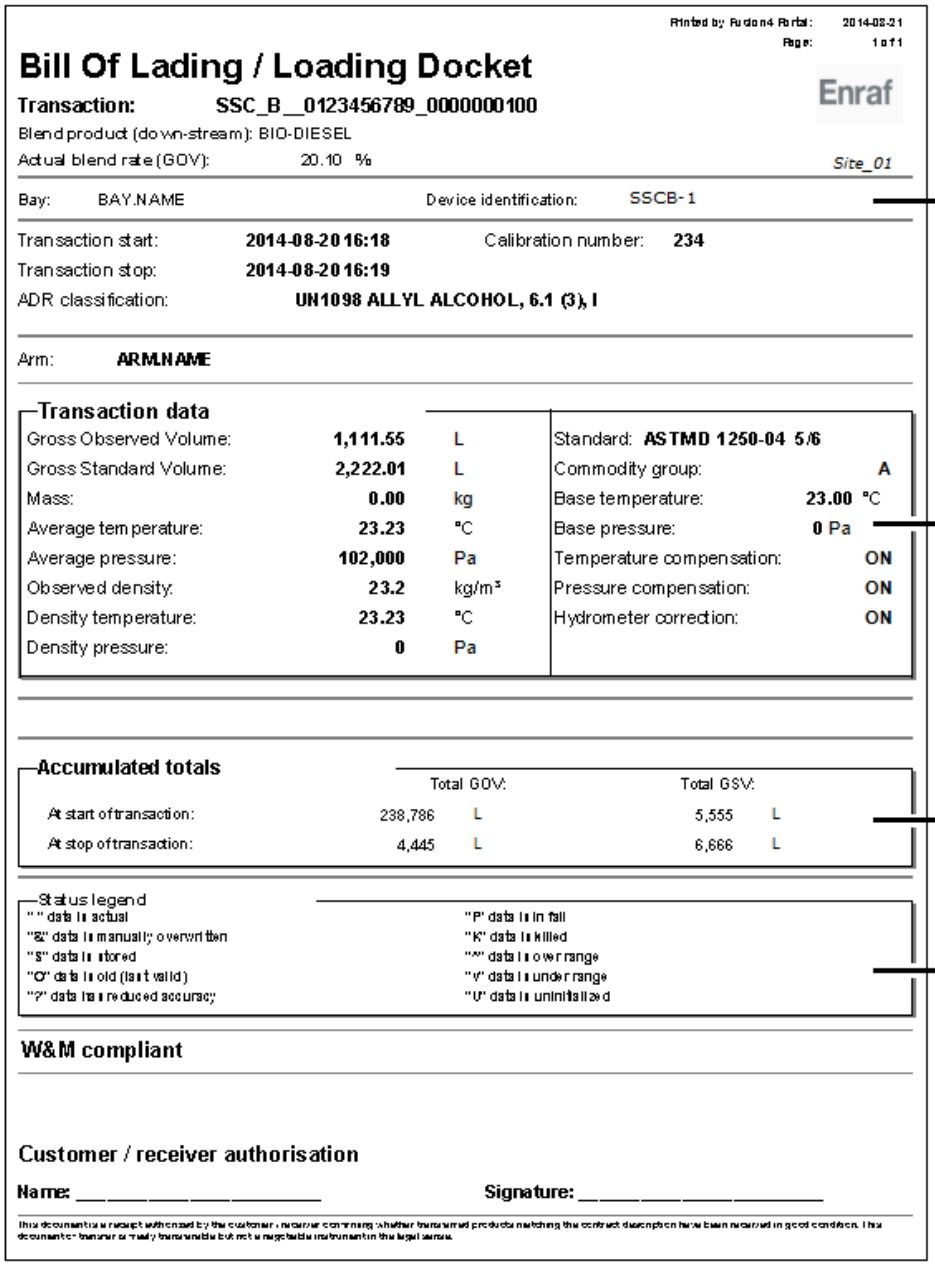
11.4.3 Status Legend

The table under the status legend describes the markings used, if applicable, to indicate the status of the data on the list of transaction data.

11.5 Bill of Lading for SSC-B

The following figure illustrates a sample Bill of Lading for SSC-B device.

Figure 3: Example of Bill of Lading for SSC-B



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Bill Of Lading / Loading Docket

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Transaction: SSC_B__0123456789_0000000100

Blend product (down-stream): BIO-DIESEL

Actual blend rate (GOV): 20.10 %

Site_01

Bay: BAY.NAME Device identification: SSCB-1 — 1

Transaction start: **2014-08-20 16:18** Calibration number: **234**

Transaction stop: **2014-08-20 16:19**

ADR classification: **UN1098 ALLYL ALCOHOL, 6.1 (3), I**

Arm: **ARM.NAME**

Transaction data

Gross Observed Volume:	**1,111.55**	L	Standard:	**ASTMD 1250-04 5/6**	
Gross Standard Volume:	**2,222.01**	L	Commodity group:	**A**	
Mass:	**0.00**	kg	Base temperature:	**23.00** °C	
Average temperature:	**23.23**	°C	Base pressure:	**0** Pa	2
Average pressure:	**102,000**	Pa	Temperature compensation:	**ON**	
Observed density:	**23.2**	kg/m³	Pressure compensation:	**ON**	
Density temperature:	**23.23**	°C	Hydrometer correction:	**ON**	
Density pressure:	**0**	Pa			

Accumulated totals

	Total GOV:		Total GSV:		
At start of transaction:	238,786	L	5,555	L	3
At stop of transaction:	4,445	L	6,666	L	

Status legend

" " data is actual	"F" data is in fail
"E" data is manually overwritten	"K" data is killed
"S" data is stored	"^" data is over range
"O" data is old (last valid)	"v" data is under range
"?" data has reduced accuracy;	"U" data is uninitialized

4

W&M compliant

Customer / receiver authorisation

Name: _____ **Signature:** _____

This document is a receipt authorized by the customer / receiver confirming whether transferred products matching the contract description have been received in good condition. This document - transfer or ready transferable but not a negotiable instrument in the legal sense.

1. Bill of Lading header (see Section 11.5.1: Bill of Lading Header)
2. Transaction data table (see Section 11.5.2: Transaction Data)
3. Accumulated totals table (see Section 11.5.3: Accumulated Totals)
4. Status Legend table (see Section 11.5.4: Status Legend)

11.5.1 Bill of Lading Header

The Bill of Lading header displays the following information (see the following table):

Table 11-6: Description of information on Bill of Lading Header

Item	Description
Printed by Fusion4 Portal	Displays the date on which the Bill of Lading was printed.
Page	Displays the current page number and page total.
Transaction	Displays the transaction ID. This ID consists of 28 characters, and comprises the device type followed by a serial number and a unique number.
Blend product (down-stream)	Displays the name of the blend product that was transferred.
Actual blend rate (GOV)	Displays the percentage of blend product (GOV) in the delivered end product (GOV).
Site name	Displays the name of the site on which the transaction took place.
Bay	Displays the ID of the loading bay on which the transaction took place.
Device identification	Displays the ID of the SSC-B device that was used for the transaction.
Transaction start	Displays the date and time when the transaction started.
Transaction stop	Displays the date and time when the transaction stopped.

Item	Description
ADR Classification	Displays the ADR Classification for the batch that was transferred. It consists of: UN number and proper shipping name UN numbers are four-digit numbers that identify hazardous substances and articles. The UN numbers are assigned by the United Nations Committee of Experts on the Transport of Dangerous Goods. Associated with each UN number is a hazard identifier (ADR class) ADR class ADR (Accord européen relatief au transport international de marchandises Dangereuses par Route) is an European agreement concerning the international carriage of dangerous goods by road. The ADR divides dangerous goods into the following classes: • Class 1: Explosive substances and articles • Class 2: Gases • Class 3: Flammable liquids • Class 4.1: Flammable solids, self-reactive substances and solid desensitized explosives • Class 4.2: Substances liable to spontaneous combustion • Class 4.3: Substances which, in contact with water, emit flammable gases • Class 5.1: Oxidizing substances • Class 5.2: Organic peroxides • Class 6.1: Toxic substances • Class 6.2: Infectious substances • Class 7: Radioactive material • Class 8: Corrosive substances • Class 9: Miscellaneous dangerous substances and articles

Item	Description
Arm	Displays the ID of the loading arm that was used to transfer the product.

11.5.1.1 Bill of Lading Logo

The logo is displayed at the top right-hand side. This logo can be replaced by the logo of your company. Refer to Section 8.10: Replacing the Logo on the Bill of Lading for more information.

11.5.2 Transaction Data

The table under Transaction data displays the following information.

Table 11-7: Description of information in Transaction data table

Item	Description
Gross Observed Volume	Displays the Gross Observed Volume of the product that was transferred, i.e. the real transferred volume, not corrected for temperature or pressure effects on the volume.
Gross Standard Volume	Displays the Gross Standard Volume of the product that was transferred, i.e. the total volume of all liquids corrected by the appropriate volume correction factor for the observed temperature, density and pressure.
Mass	Displays the mass of the product that was transferred.
Average temperature	Displays the average temperature of the product that was transferred.
Average pressure	Displays the average pressure of the liquid during the time that the product was transferred.
Average density	Displays the average density of the product that was transferred.
Observed density	Displays the observed density that is used to calculate the reference density.
Density temperature	Displays the temperature at which the observed product density was determined.
Density pressure	Displays the pressure at which the observed product density was determined.

Item	Description
Standard	Displays the volume correction method used during the transaction for the blend product. It consists of a table identification. Available tables are: • "-" (No table) • 5/6 • 23/24 • 53/54 • 59/60
Commodity group	Displays the table name and commodity group that are used for the GSV calculation. The table name refers to used tables or algorithms in an API standard. The following product classes can be distinguished: • "-" = No commodity group selected • A = Crude oil • B = Refined products • C = Lubricating oils • D = Special applications • E = NGL (= natural gas liquid) and LPG (= liquefied petroleum gas) • F = Fatty Acid Methyl Esters
Base temperature	Displays the reference temperature that is used for the volume correction.
Base pressure	Displays the reference pressure that is used for the volume correction.
Temperature compensation	Displays whether temperature compensation was On or Off during the transfer of the product.
Pressure compensation	Displays whether pressure compensation was On or Off during the transfer of the product.
Hydrometer correction	Displays whether hydrometer correction was On or Off during the transfer of the product.

11.5.3 Accumulated Totals

The Accumulated totals table displays the following information.

Item	Description
Total GOV	Displays the accumulated volume at the start or end of the batch. The volume is not corrected.
Total GSV	Displays the accumulated volume at the start or end of the batch. The volume is corrected and calculated for reference conditions.

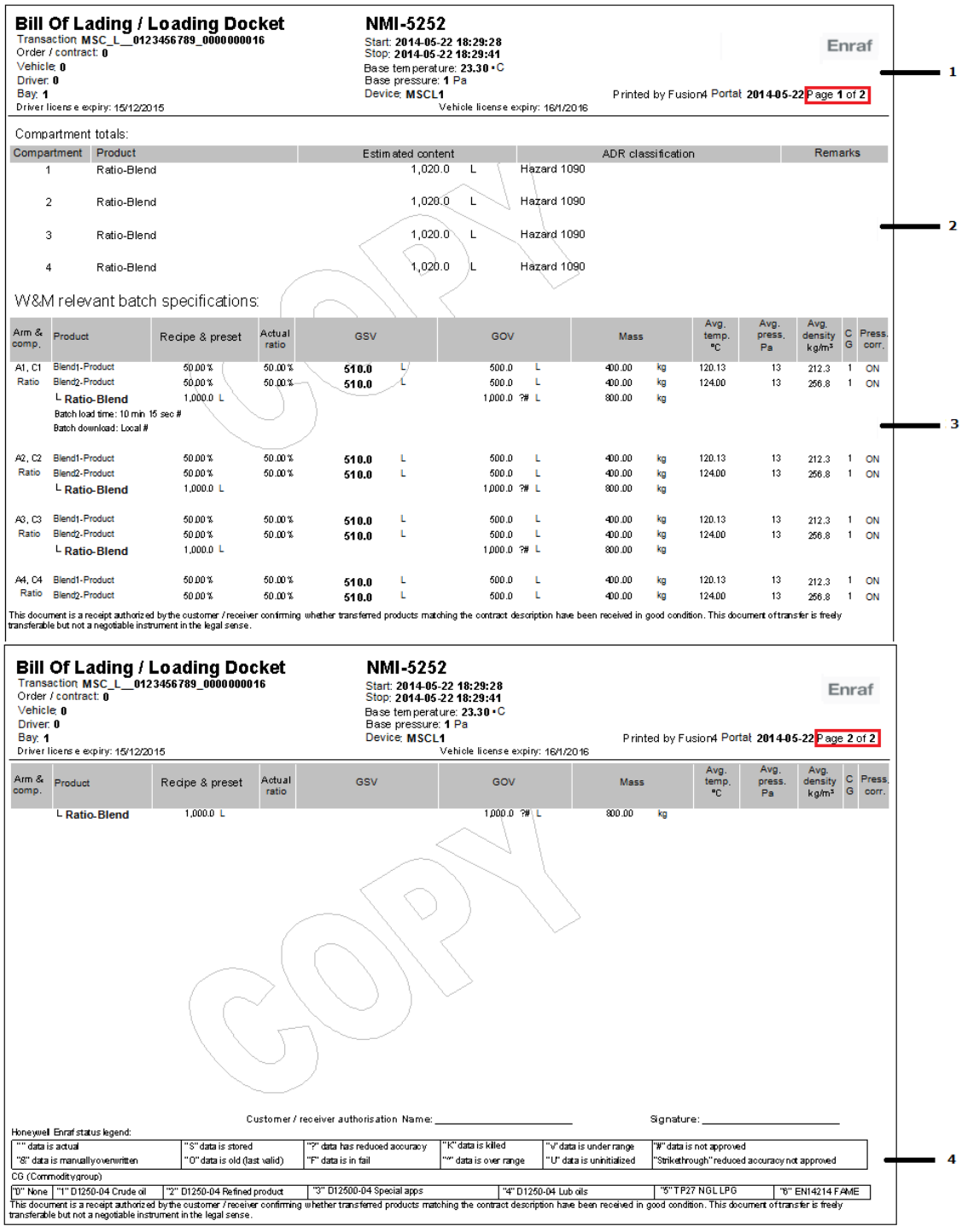
11.5.4 Status Legend

The table under Status legend describes the markings used, if applicable, to indicate the status of the information on the Bill of Lading.

11.6 Bill of Lading for MSC-L

The following figure illustrates a Bill of Lading for an MSC-L device.

Figure 11-1: Example of Bill of Lading for MSC-L



Bill Of Lading / Loading Docket

Transaction: **MSC_L__0123456789_0000000016**
Order / contract: **0**
Vehicle: **0**
Driver: **0**
Bay: **1**
Driver licens e expiry: 15/12/2015

NMI-5252
Start: **2014-05-22 18:29:28**
Stop: **2014-05-22 18:29:41**
Base temperature: **23.30** °C
Base pressure: **1** Pa
Device: **MSCL1**
Vehicle license expiry: 16/1/2016

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1

Compartment totals:

Compartment	Product	Estimated content	ADR classification	Remarks
1	Ratio-Blend	1,020.0 L	Hazard 1090	
2	Ratio-Blend	1,020.0 L	Hazard 1090	
3	Ratio-Blend	1,020.0 L	Hazard 1090	
4	Ratio-Blend	1,020.0 L	Hazard 1090	

2

W&M relevant batch specifications:

Arm & comp.	Product	Recipe & preset	Actual ratio	GSV	GOV	Mass	Avg. temp. °C	Avg. press. Pa	Avg. density kg/m³	C G	Press. corr.
A1, C1	Blend1-Product	50.00 %	50.00 %	**510.0** L	500.0 L	400.00 kg	120.13	13	212.3	1	ON
Ratio	Blend2-Product	50.00 %	50.00 %	**510.0** L	500.0 L	400.00 kg	124.00	13	256.8	1	ON
	└ **Ratio-Blend**	1,000.0 L			1,000.0 ?# L	800.00 kg					
	Batch load time: 10 min 15 sec #										
	Batch download: Local #										
A2, C2	Blend1-Product	50.00 %	50.00 %	**510.0** L	500.0 L	400.00 kg	120.13	13	212.3	1	ON
Ratio	Blend2-Product	50.00 %	50.00 %	**510.0** L	500.0 L	400.00 kg	124.00	13	256.8	1	ON
	└ **Ratio-Blend**	1,000.0 L			1,000.0 ?# L	800.00 kg					
A3, C3	Blend1-Product	50.00 %	50.00 %	**510.0** L	500.0 L	400.00 kg	120.13	13	212.3	1	ON
Ratio	Blend2-Product	50.00 %	50.00 %	**510.0** L	500.0 L	400.00 kg	124.00	13	256.8	1	ON
	└ **Ratio-Blend**	1,000.0 L			1,000.0 ?# L	800.00 kg					
A4, C4	Blend1-Product	50.00 %	50.00 %	**510.0** L	500.0 L	400.00 kg	120.13	13	212.3	1	ON
Ratio	Blend2-Product	50.00 %	50.00 %	**510.0** L	500.0 L	400.00 kg	124.00	13	256.8	1	ON

3

This document is a receipt authorized by the customer / receiver confirming whether transferred products matching the contract description have been received in good condition. This document of transfer is freely transferable but not a negotiable instrument in the legal sense.

Bill Of Lading / Loading Docket

Transaction: **MSC_L__0123456789_0000000016**
Order / contract: **0**
Vehicle: **0**
Driver: **0**
Bay: **1**
Driver licens e expiry: 15/12/2015

NMI-5252
Start: **2014-05-22 18:29:28**
Stop: **2014-05-22 18:29:41**
Base temperature: **23.30** °C
Base pressure: **1** Pa
Device: **MSCL1**
Vehicle license expiry: 16/1/2016

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Arm & comp.	Product	Recipe & preset	Actual ratio	GSV	GOV	Mass	Avg. temp. °C	Avg. press. Pa	Avg. density kg/m³	C G	Press. corr.
	└ **Ratio-Blend**	1,000.0 L			1,000.0 ?# L	800.00 kg					

Customer / receiver authorisation Name: _____ Signature: _____

Honeywell Enraf status legend:

" " data is actual	"S" data is stored	"?" data has reduced accuracy	"K" data is killed	"v" data is under range	"#" data is not approved
"&" data is manually overwritten	"O" data is old (last valid)	"F" data is in fail	"^" data is over range	"U" data is uninitialized	"Strikethrough" reduced accuracy not approved

CG (Commodity group)

"0" None	"1" D1250-04 Crude oil	"2" D1250-04 Refined product	"3" D12500-04 Special apps	"4" D1250-04 Lub oils	"5" TP27 NGL LPG	"6" EN14214 FAME

4

This document is a receipt authorized by the customer / receiver confirming whether transferred products matching the contract description have been received in good condition. This document of transfer is freely transferable but not a negotiable instrument in the legal sense.

1. Bill of Lading header (see Section 11.6.1: Bill of Lading Header)
2. Compartment totals table (see Section 11.6.2: Compartment Totals)

3. W&M relevant batch specifications table (see Section 11.6.3: W&M relevant batch specifications)
4. Status Legend table (see Section 11.6.4: Status Legend)

11.6.1 Bill of Lading Header

The Bill of Lading header displays the following information (see the following table).

Table 11-8: Description of information on Bill of Lading Header

Item	Description
Printed by Fusion4 Portal	Displays the date on which the Bill of Lading was printed.
Page	Displays the current page number and page total.
Transaction	Displays the transaction ID. This ID consists of 28 characters, and comprises the device type followed by a serial number and a unique number.
Order/contract	Displays the ID of the order or contract for which the transaction took place.
Vehicle	Displays the ID of the vehicle.
Driver	Displays the ID of the driver.
Bay	Displays the ID of the loading bay in which the transaction took place.
Site name	Displays the name of the site on which the transaction took place.
Start	Displays the date and time when the transaction started.
Stop	Displays the date and time when the transaction stopped.
Base temperature	Displays the reference temperature that is used for the volume correction.
Base pressure	Displays the reference pressure that is used for the volume correction.
Device	Displays the ID of the device (MSC-L) that was used for the transaction.

11.6.1.1 Bill of Lading Logo

The logo is displayed at the top right-hand side. This logo can be replaced by the logo of your company. Refer to section for more information.

11.6.2 Compartment Totals

The table under Compartment totals displays the following information (see the following table).

Table 11-9: Description of information in Compartment totals table

Item	Description
Compartment	Displays the number of the compartment to which the batch was transferred.
Product	Displays the name of the product that was transferred.
Estimated Content	Displays the total Gross Observed Volume of the batch or batches that was/were transferred to the compartment.

Item	Description
ADR Classification	Displays the ADR Classification for the batch that was transferred. It consists of: UN number and proper shipping name UN numbers are four-digit numbers that identify hazardous substances and articles. The UN numbers are assigned by the United Nations Committee of Experts on the Transport of Dangerous Goods. Associated with each UN number is a hazard identifier (ADR class) ADR class ADR (Accord européen relatief au transport international de marchandises Dangereuses par Route) is an European agreement concerning the international carriage of dangerous goods by road. The ADR divides dangerous goods into the following classes: • Class 1: Explosive substances and articles • Class 2: Gases • Class 3: Flammable liquids • Class 4.1: Flammable solids, self-reactive substances and solid desensitized explosives • Class 4.2: Substances liable to spontaneous combustion • Class 4.3: Substances which, in contact with water, emit flammable gases • Class 5.1: Oxidizing substances • Class 5.2: Organic peroxides • Class 6.1: Toxic substances • Class 6.2: Infectious substances • Class 7: Radioactive material • Class 8: Corrosive substances • Class 9: Miscellaneous dangerous substances and articles
Remarks	Displays any additional details about the transaction.

11.6.3 W&M relevant batch specifications

The W&M relevant batch specifications table displays the following information (see the following table).

Table 11-10: Description of items in W&M relevant batch specifications

Item	Description
Arm & comp.	Displays the ID of the loading arm that was used to transfer the product. Also displays the compartment to which the batch was transferred.
Product	Displays the name of the products that were transferred.
Recipe & preset	Displays the recipe and the preset volume (GOV) or mass. The recipe configured on the MSC-L device controls the rate of additive being injected into the product stream. Preset indicates the preset quantity for the batch.
Actual ratio	Displays the percentage of the main/blend product in the total transferred stream.
Gross Standard Volume (GSV)	Displays the Gross Standard Volume of the product that was transferred, i.e. the total volume of all liquids corrected by the appropriate volume correction factor for the observed temperature, density and pressure.
Gross Observed Volume (GOV)	Displays the Gross Observed Volume of the product that was transferred, i.e. the real transferred volume, not corrected for temperature or pressure effects on the volume.
Mass	Displays the mass of the product that was transferred.
Average temperature	Displays the average temperature of the product that was transferred.
Average pressure	Displays the average pressure of the liquid during the time that the product was transferred.
Average density	Displays the average density of the product that was transferred.

Item	Description
Pressure corr	Displays whether pressure correction was On or Off during the transfer of the product.
Commodity group	Displays the table name and commodity group that are used for the GSV calculation. The table name refers to used tables or algorithms in an API standard. The following product classes can be distinguished: • "0" = No commodity group selected • 1 = Crude oil • 2 = Refined products • 3 = Special apps • 4 = Lub oils • 5 = NGL (= natural gas liquid) and LPG (= liquefied petroleum gas) • 6 = Fatty Acid Methyl Esters

11.6.4 Status Legend

The table under the Status legend describes the markings used, if applicable, to indicate the status of the information on the Bill of Lading.

12 Device Diagnostics

12.1 Diagnostics

Fusion4 Portal enables you to view the system health and dashboard details of all the configured devices.

You can view the diagnostics of the following devices:

- SSC-A
- SSC-B
- MSC-A
- MSC-L

> NOTE: You can view the diagnostics of the devices only if you have discovered the devices in the site using the “Auto Discover” feature.

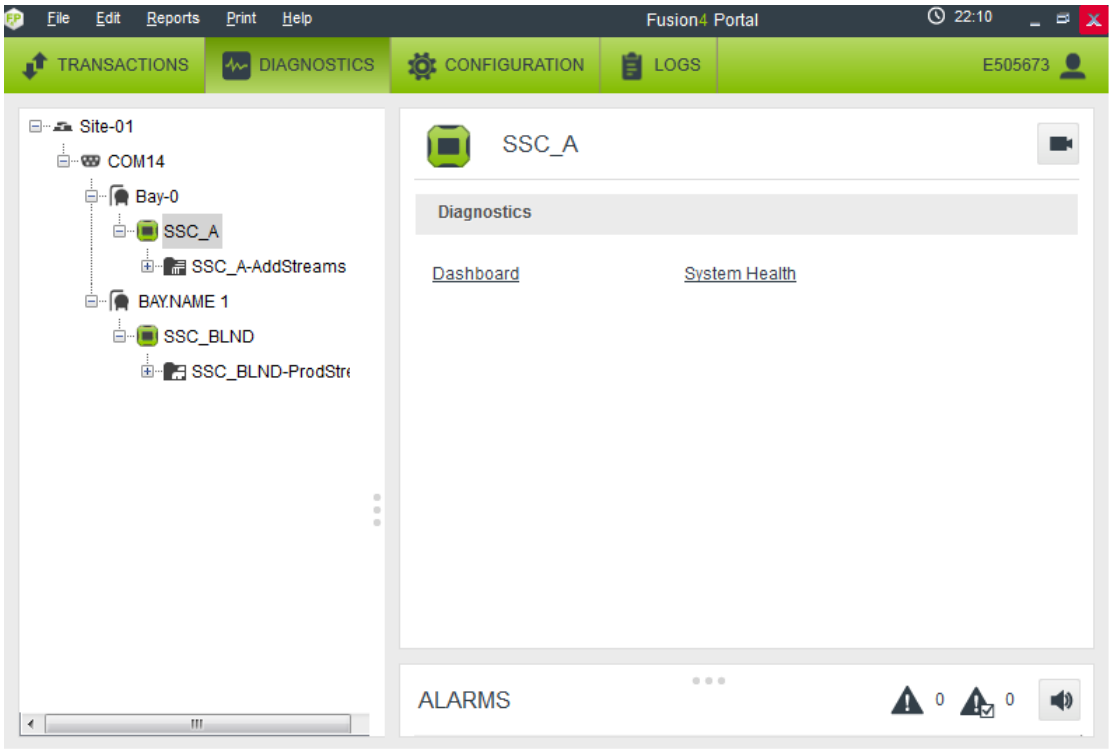
12.2 Viewing SSC-A Diagnostics

12.2.1 Viewing SSC-A Dashboard Diagnostics

To view the diagnostics of an SSC-A device, perform the following steps:

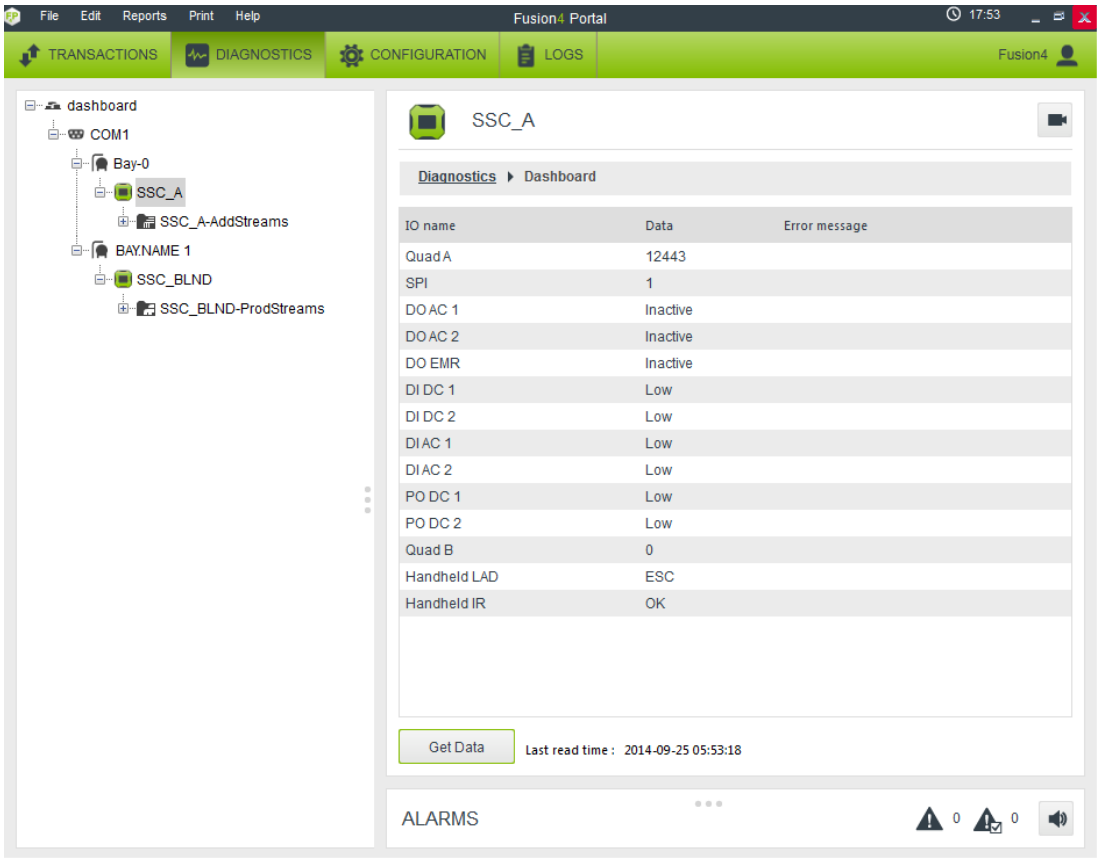
1. In the site tree, select the SSC-A device whose diagnostic details you want to view.
2. From the menu bar, click the DIAGNOSTICS tab.

   The Diagnostics window for the selected SSC-A device is displayed, with settings such as Dashboard and System Health.



3. Under Diagnostics, click Dashboard.

   The Dashboard window is displayed.



The following details are displayed by default.

- IO Name: The name of the Input/Output parameter.
- Data: The value of the parameter received from the device.

4. Click Get Data to get the current value from the device.

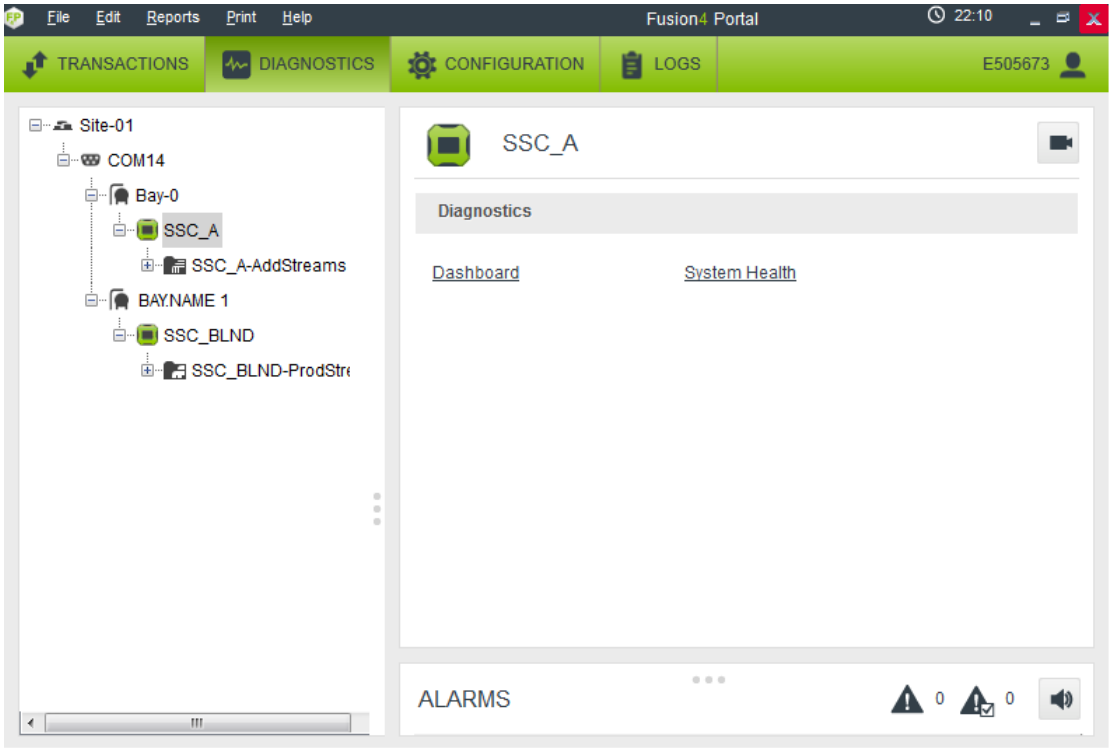
   The Last read time field displays the time when the data was last retrieved from the device.

12.2.2 Viewing SSC-A System Health

To view the system health of an SSC-A device, perform the following steps:

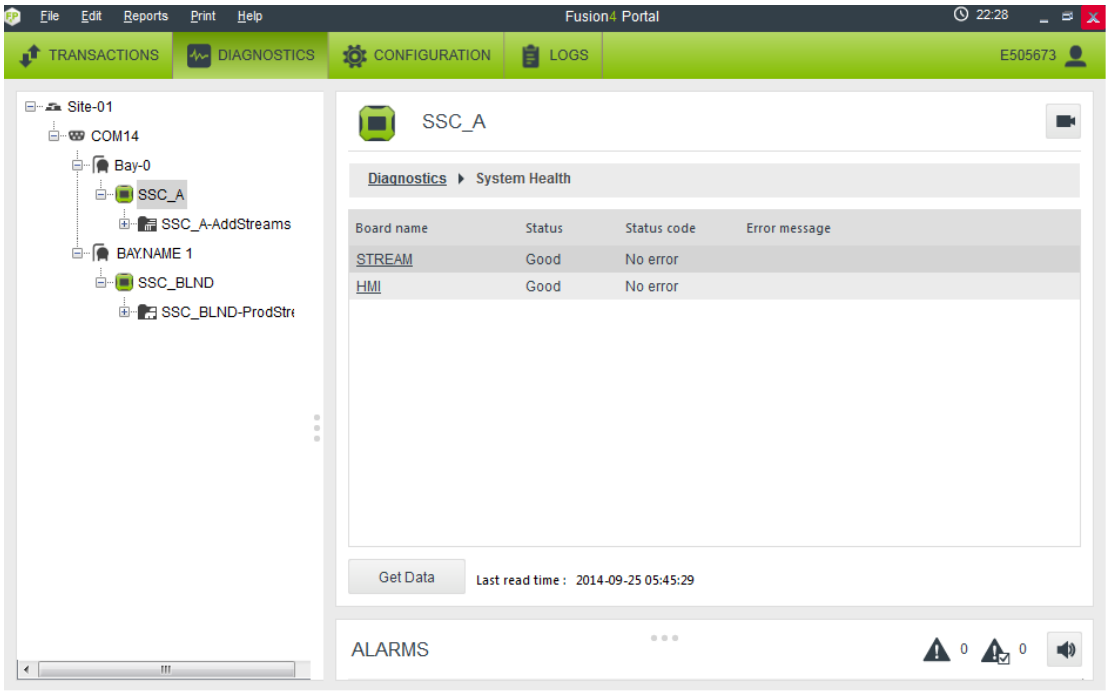
1. In the site tree, select the SSC-A device whose diagnostic details you want to view.
2. From the menu bar, click the DIAGNOSTICS tab.

The Diagnostics window for the selected SSC-A device is displayed, with settings such as Dashboard and System Health.



3. Under Diagnostics, click System Health.

   The System Health window is displayed.

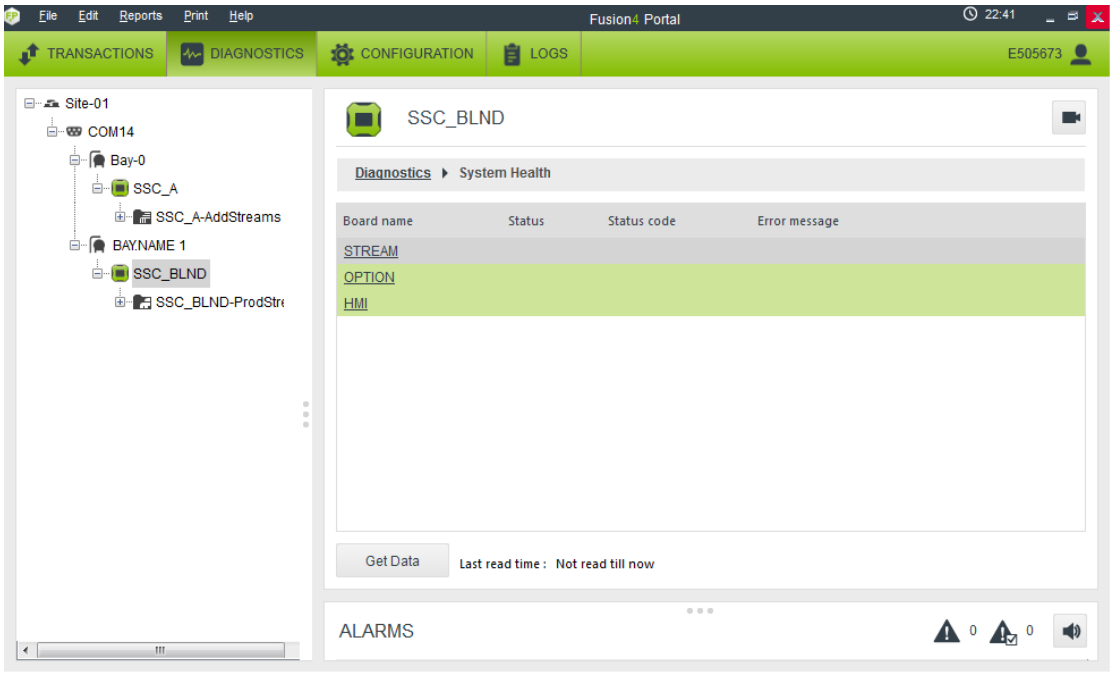


The following details are displayed by default.

- Board Name: The health status of the board connected to the selected SSC-A device
- Status: The status of the board
- StatusCode: The status code of the board

4. Under Board Name, click any board name to view its system health.

   The following window is displayed.



The following details are displayed by default.

- FunctionName: The name of the function connected to the selected SSC-A device
- Status: The health status of each board
- StatusCode: The error message, if any, displayed for the selected board

5. Click Get Data to get the current value from the device.

   The Last read time field displays the time when the data was last retrieved from the device.

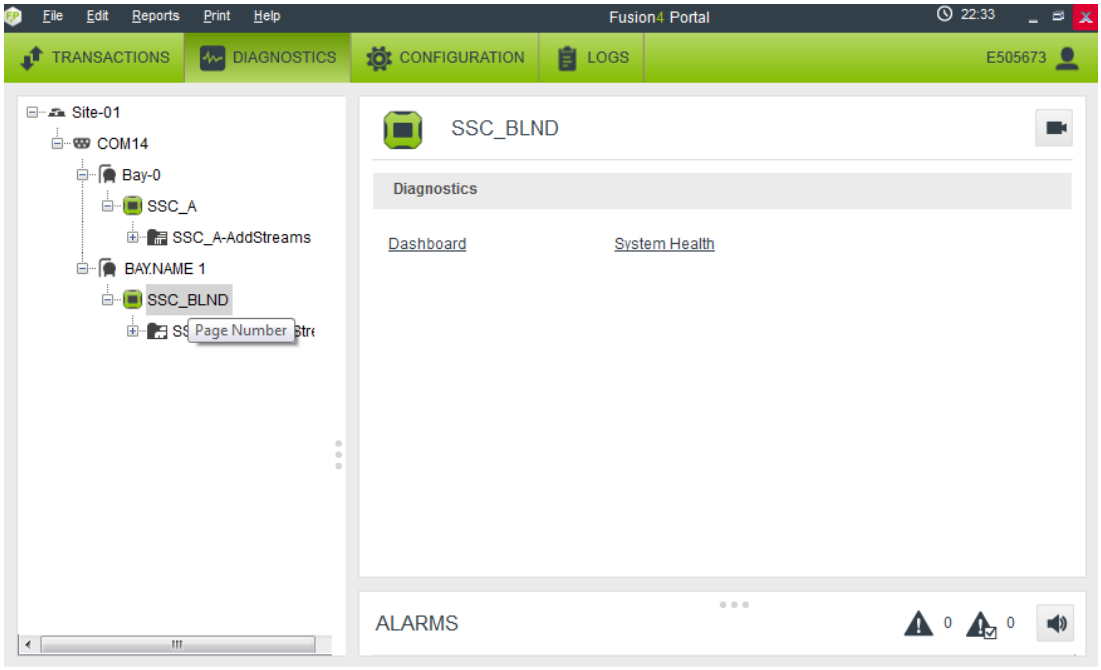
12.3 Viewing SSC-B Diagnostics

12.3.1 Viewing SSC-B Dashboard Diagnostics

To view the diagnostics of an SSC-B device, perform the following steps:

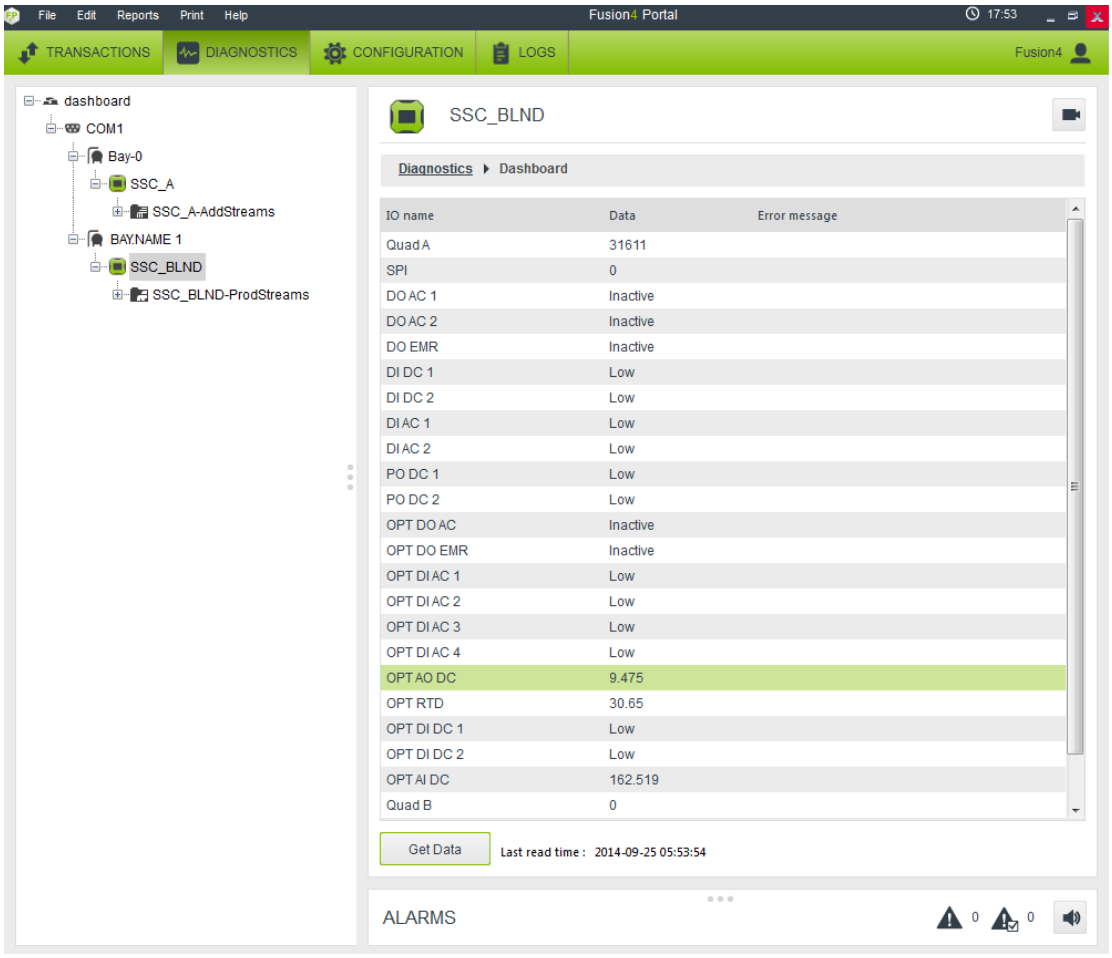
1. In the site tree, select the SSC-B device whose diagnostic details you want to view.
2. From the menu bar, click the DIAGNOSTICS tab.

The Diagnostics window for the selected SSC-B device is displayed, with settings such as Dashboard and System Health.



3. Under Diagnostics, click Dashboard.

   The Dashboard window is displayed.



The following details are displayed by default.

- IO Name: The name of the Input/Output parameter
- Data: The value of the parameter received from the device

4. Click Get Data to get the current value from the device.

   The Last read time field displays the time when the data was last retrieved from the device.

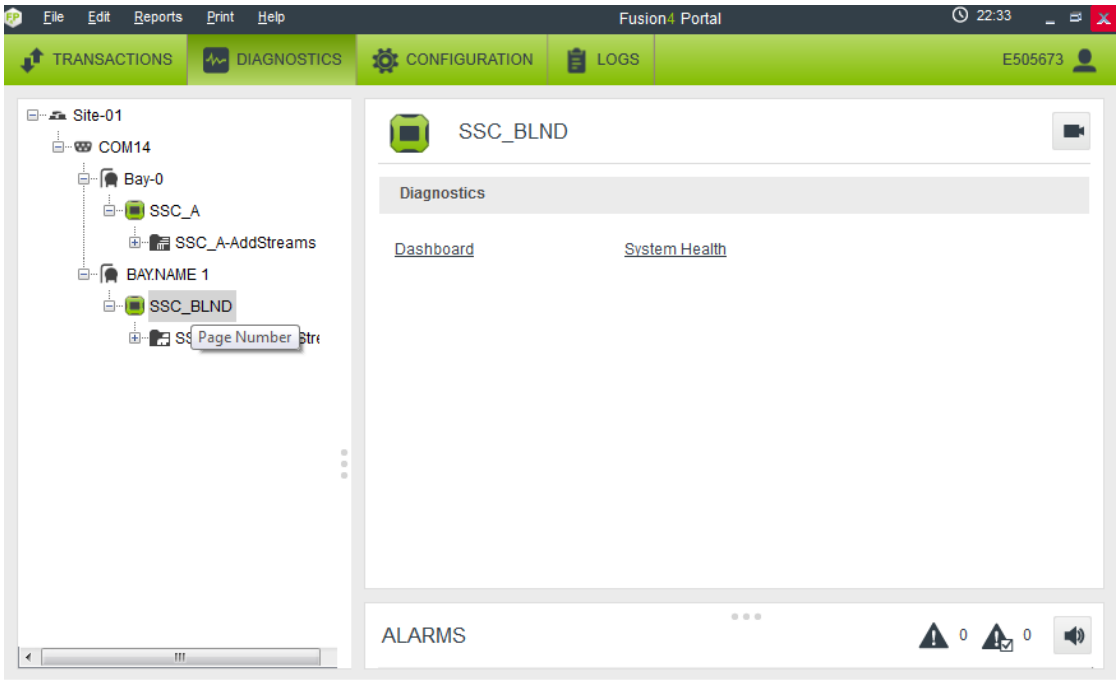
12.3.2 Viewing SSC-B System Health

To view the system health of an SSC-B device, perform the following steps:

1. In the site tree, select the SSC-B device whose diagnostic details you want to view.

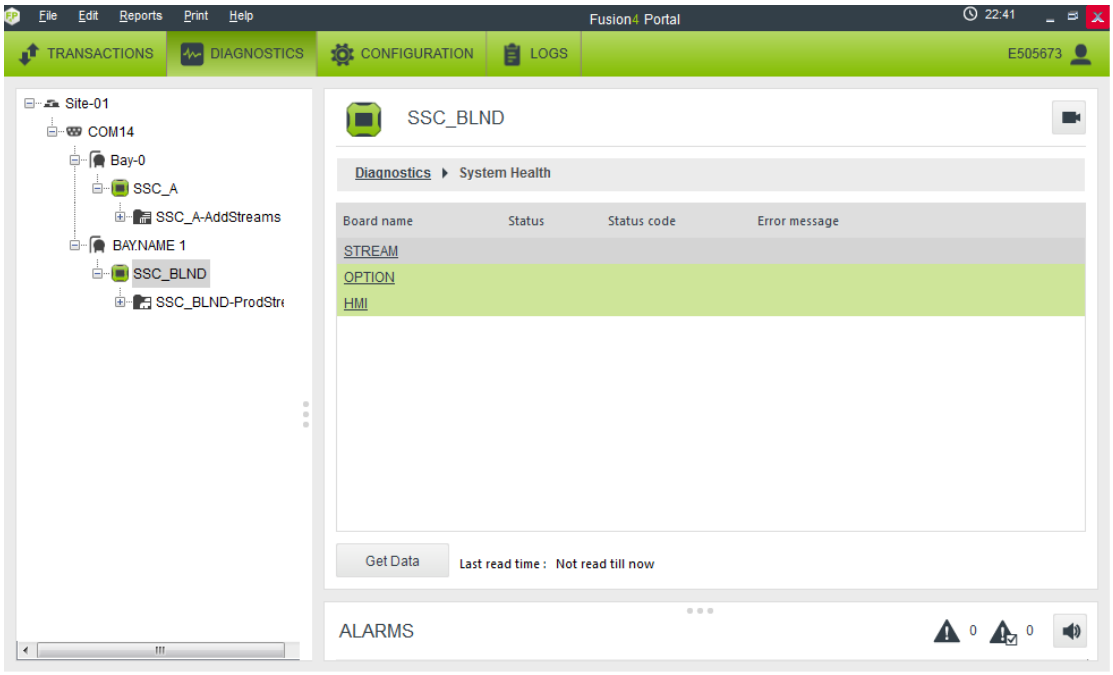
2. From the menu bar, click the DIAGNOSTICS tab.

   The Diagnostics window for the selected SSC-B device is displayed, with settings such as Dashboard and System Health.



3. Under Diagnostics, click System Health.

   The System Health window is displayed.

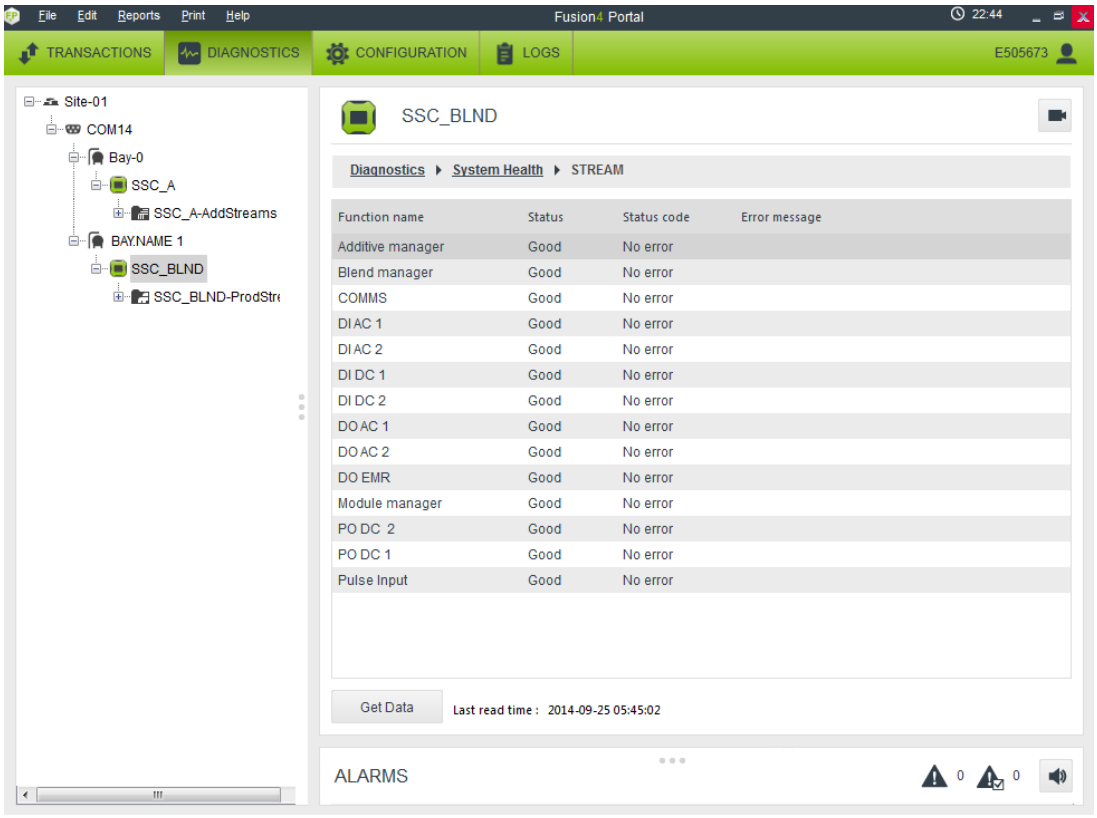


The following details are displayed by default.

- Board Name: The health status of the board connected to the selected SSC-B device
- Status: The status of the board
- StatusCode: The status code of the board

4. Under Board Name, click any board name to view its system health.

   The following window is displayed.



The following details are displayed by default.

- FunctionName: The name of the function connected to the selected SSC-B device
- Status: The health status of each board
- StatusCode: The error message, if any, displayed for the selected board

5. Click Get Data to get the current value from the device.

   The Last read time field displays the time when the data was last retrieved from the device.

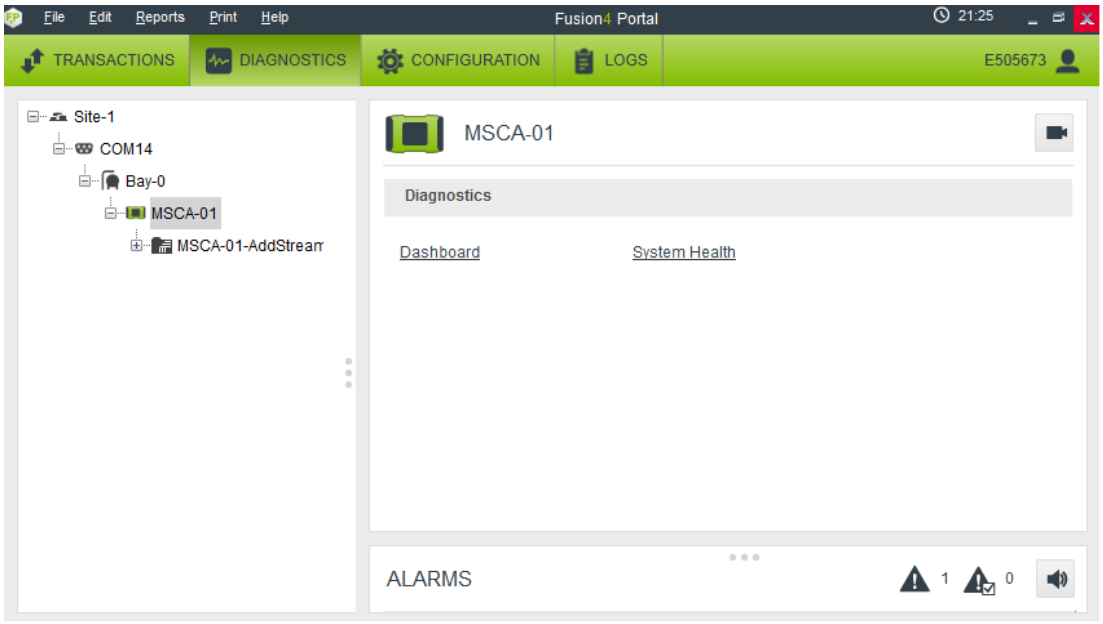
12.4 Viewing MSC-A Diagnostics

12.4.1 Viewing MSC-A Dashboard Diagnostics

To view the diagnostics of an MSC-A device, perform the following steps:

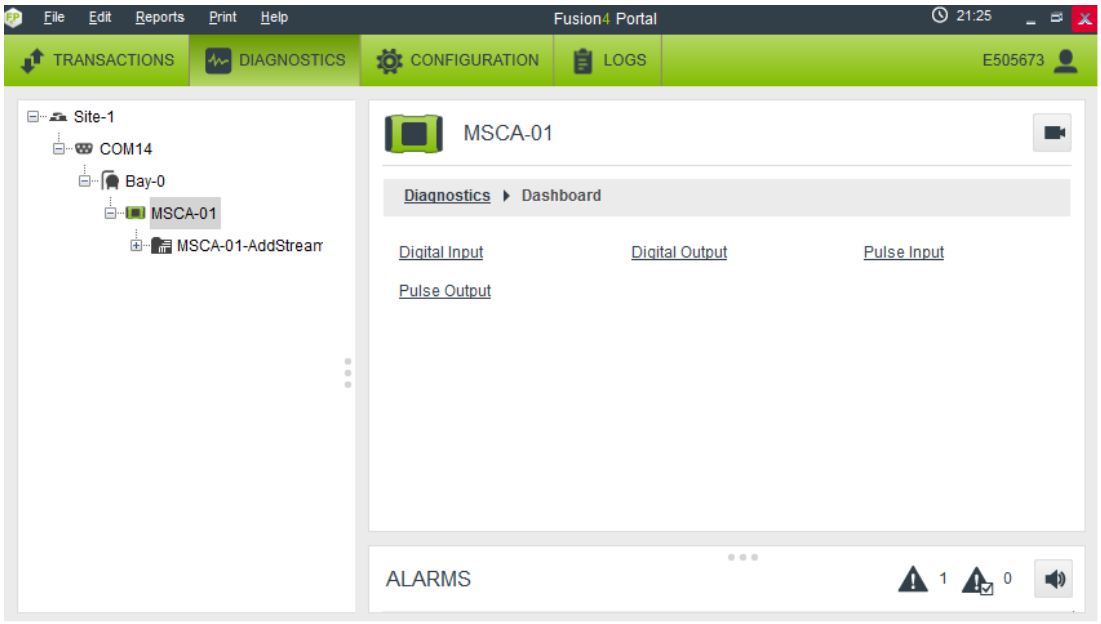
1. In the site tree, select the MSC-A device whose diagnostic details you want to view.
2. From the menu bar, click the DIAGNOSTICS tab.

   The Diagnostics window for the selected MSC-A device is displayed, with settings such as Dashboard and System Health.



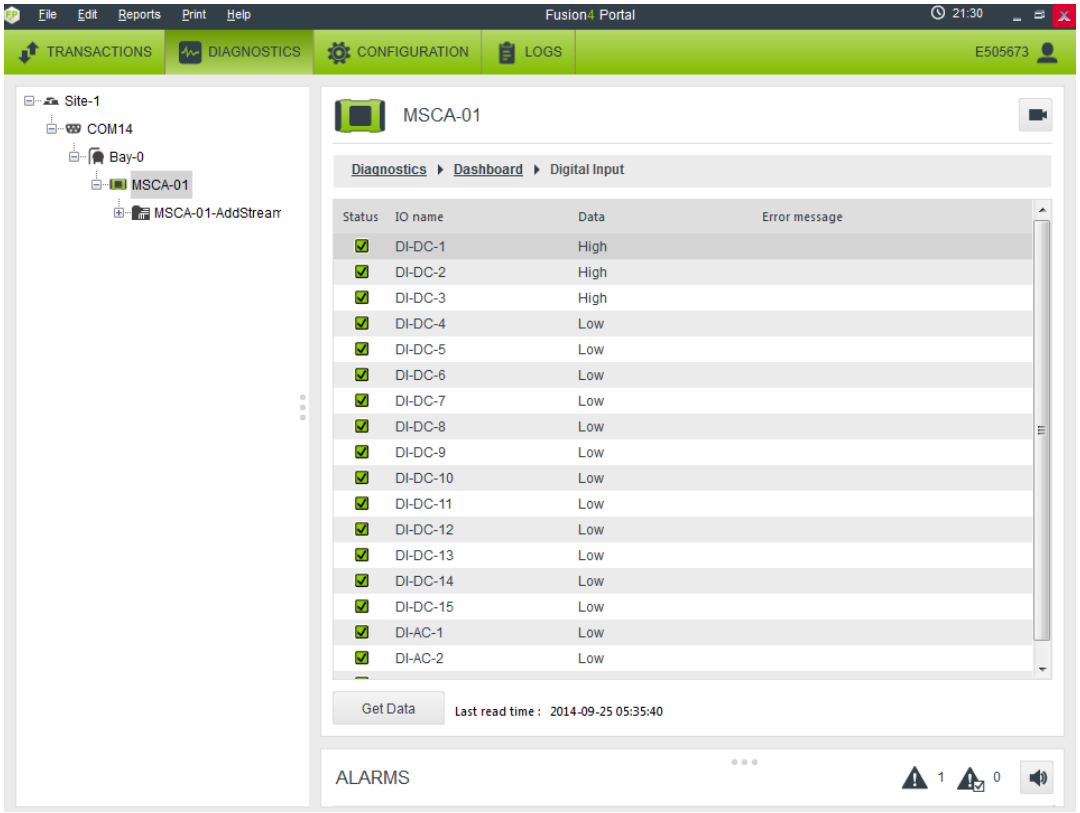
3. Under Diagnostics, click Dashboard.

   The Dashboard window is displayed.



4. Click Digital Input.

   The following window is displayed.



   The following details are displayed by default.

- Status: The health status of the parameter
- IO Name: The name of the Input/Output parameter
- Data: The value of the parameter received from the device

5. Click Get Data to get the current value from the device.

   The Last read time field displays the time when the data was last retrieved from the device.

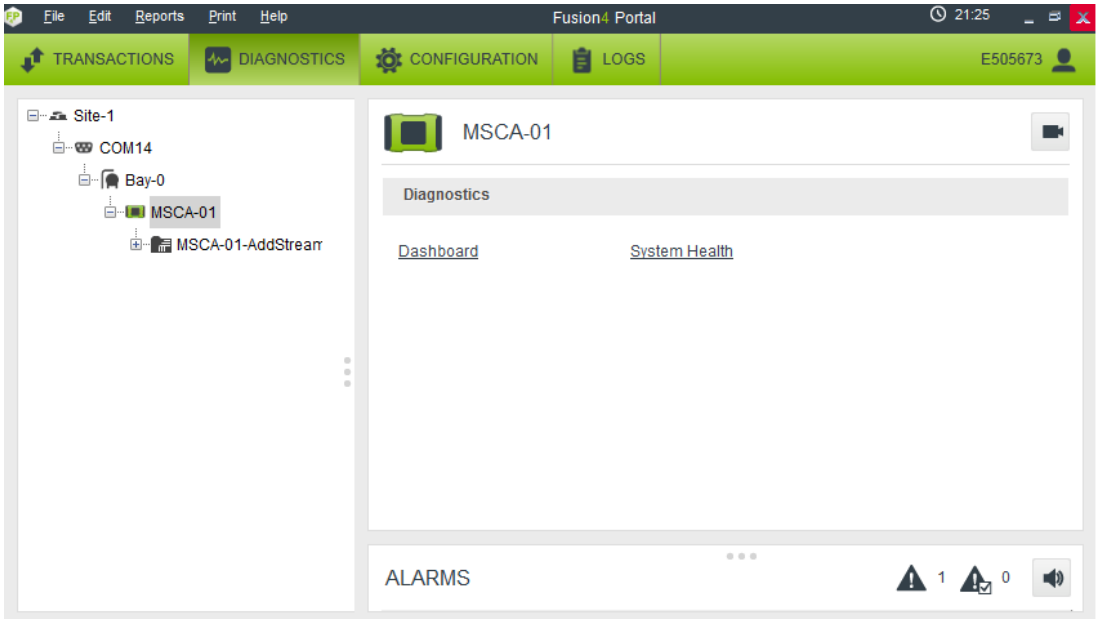
6. Repeat the above steps to get data for the other diagnostic parameters.

12.4.2 Viewing MSC-A System Health

To view the system health of an MSC-A device, perform the following steps:

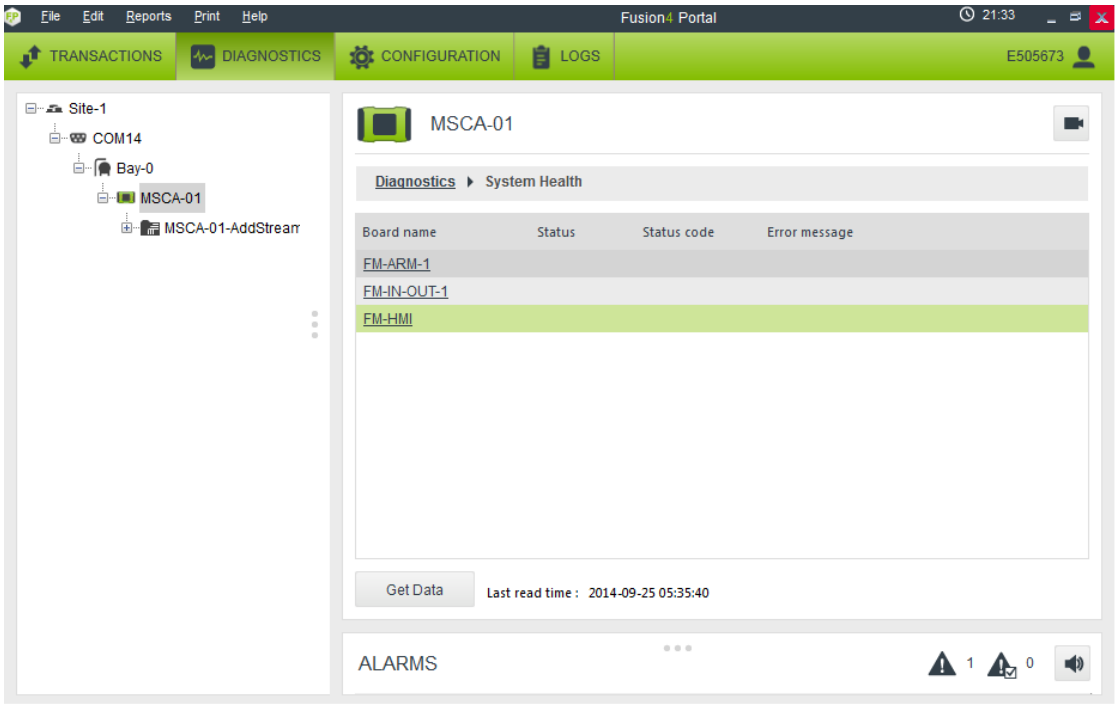
1. In the site tree, select the MSC-A device whose diagnostic details you want to view.
2. From the menu bar, click the DIAGNOSTICS tab.

   The Diagnostics window for the selected MSC-A device is displayed, with settings such as Dashboard and System Health.



3. Under Diagnostics, click System Health.

The System Health window is displayed.

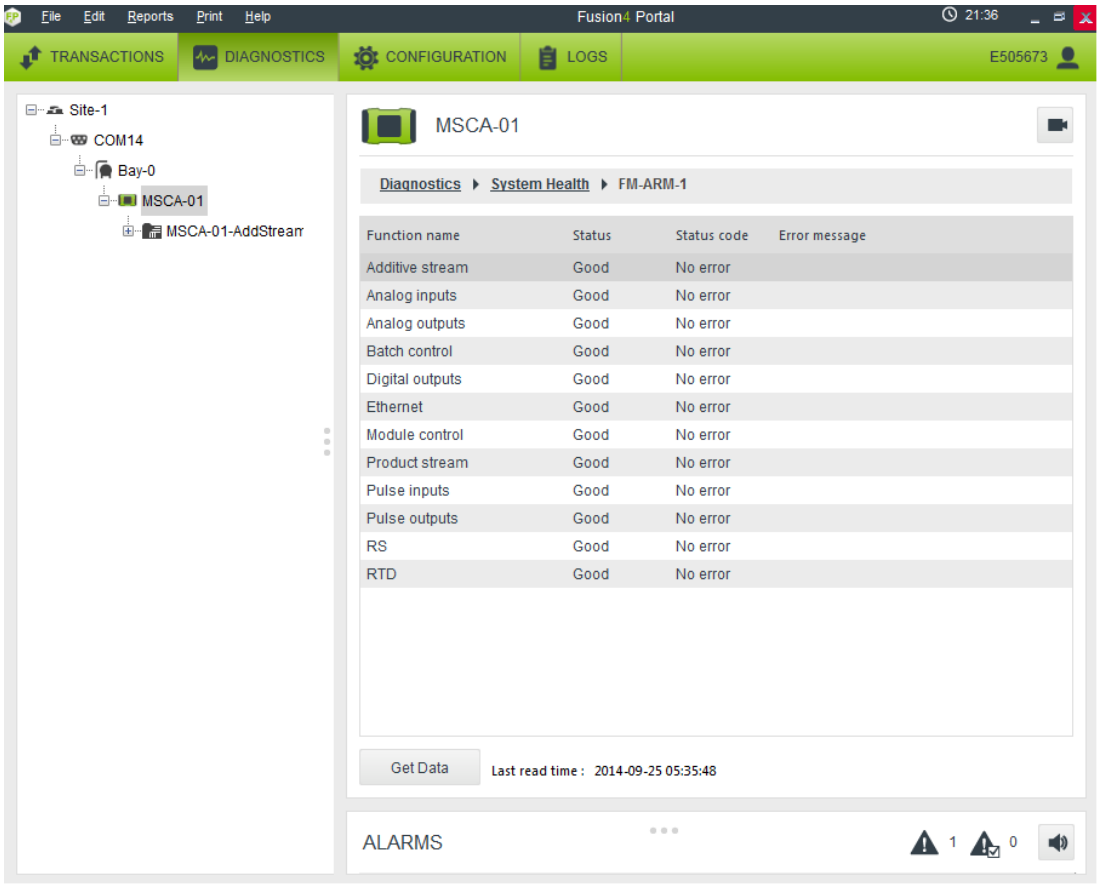


The following details are displayed by default.

- Board Name: The health status of the board connected to the selected MSC-A device
- Status: The status of the board
- StatusCode: The status code of the board

4. Under Board Name, click any board name to view its system health.

   The following window is displayed.



The following details are displayed by default.

- FunctionName: The name of the function connected to the selected MSC-A device
- Status: The health status of each board
- StatusCode: The error message, if any, displayed for the selected board

5. Click Get Data to get the current value from the device.

   The Last read time field displays the time when the data was last retrieved from the device.

6. Repeat the above steps to get data for other diagnostic parameters.

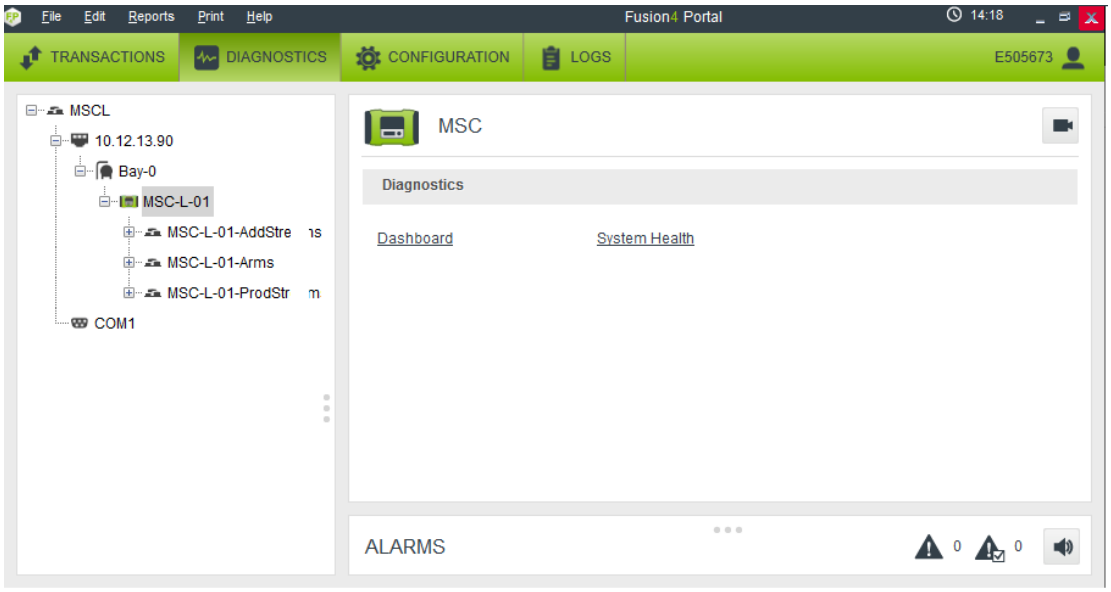
12.5 Viewing MSC-LDiagnostics

12.5.1 Viewing MSC-LDashboard Diagnostics

To view the diagnostics of an MSC-Ldevice, perform the following steps:

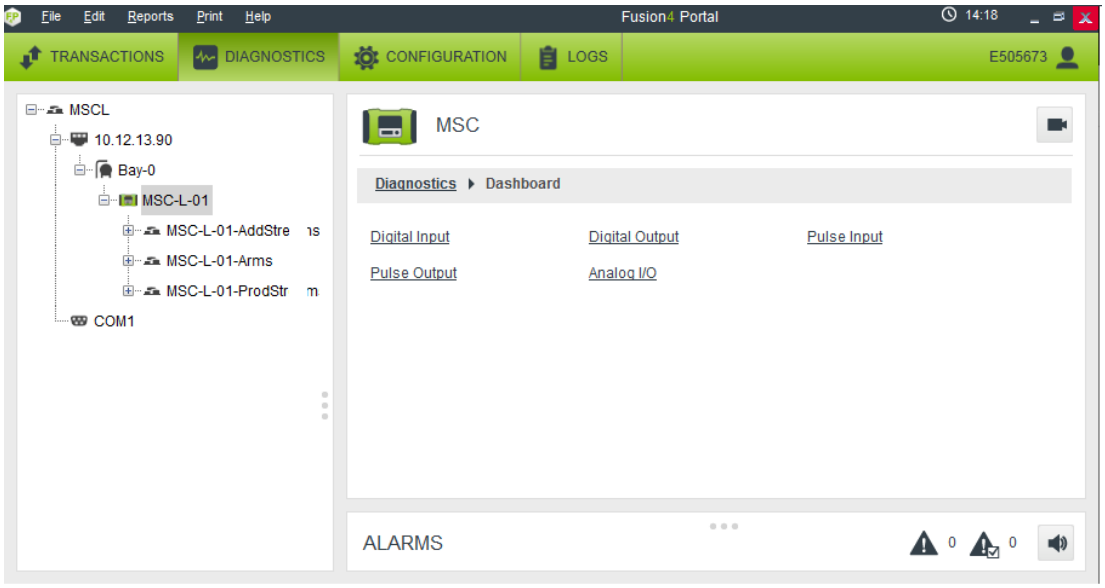
1. In the site tree, select the MSC-Ldevice whose diagnostic details you want to view.
2. From the menu bar, click the DIAGNOSTICS tab.

   The Diagnostics window for the selected MSC-Ldevice is displayed, with settings such as Dashboard and System Health.



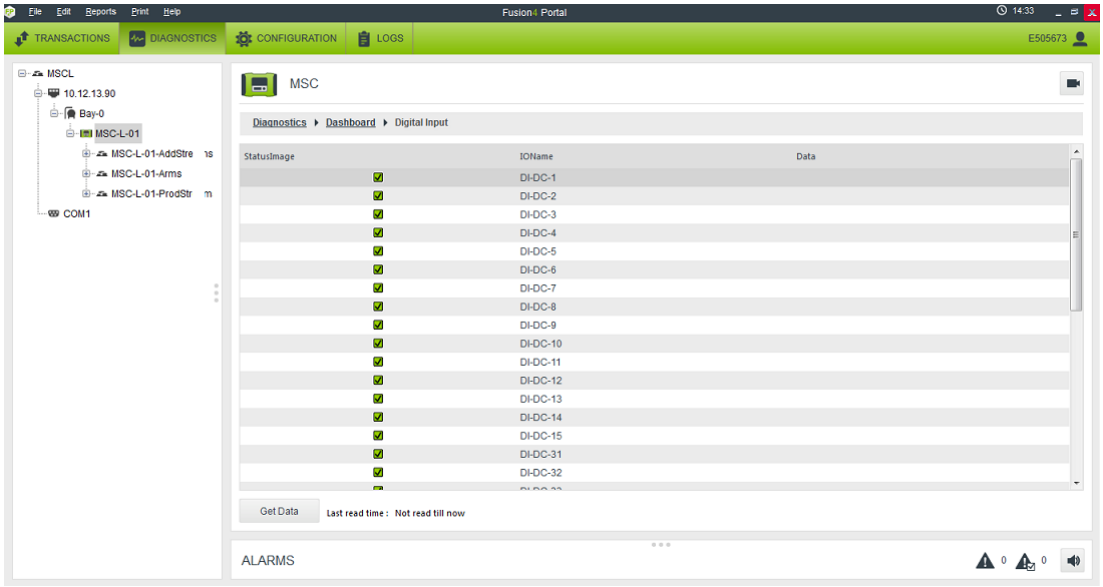
3. Under Diagnostics, click Dashboard.

   The Dashboard window is displayed.



4. Click Digital Input.

   The following window is displayed.



   The following details are displayed by default.

   - Status: The health status of the parameter
   - IO Name: The name of the Input/Output parameter
   - Data: The value of the parameter received from the device

5. Click Get Data to get the current value from the device.

The Last read time field displays the time when the data was last retrieved from the device.

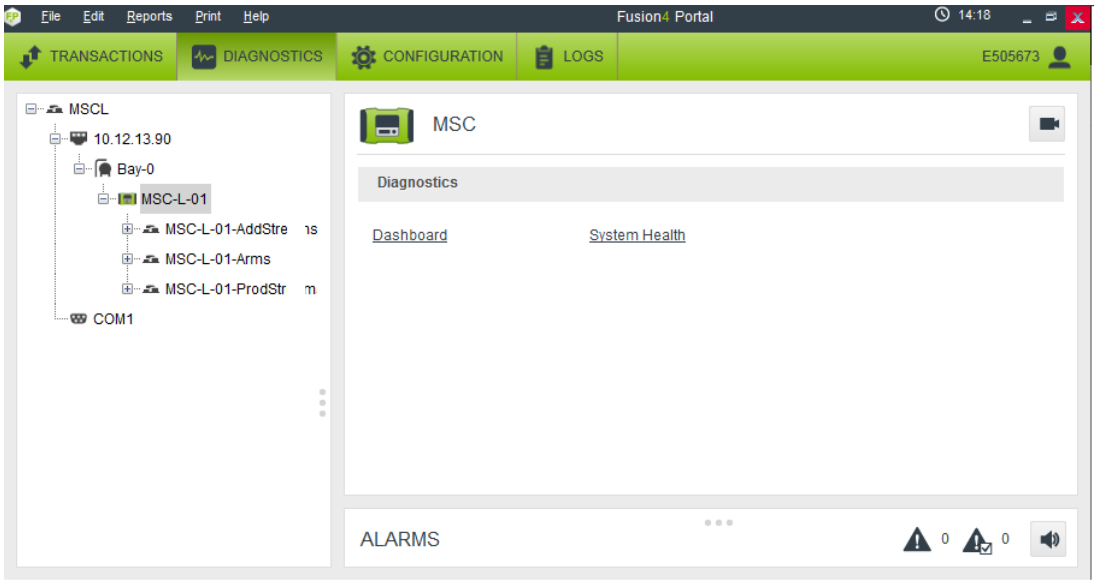
6. Repeat the above steps to get data for other diagnostic parameters.

12.5.2 Viewing MSC-L System Health

To view the system health of an MSC-L device, perform the following steps:

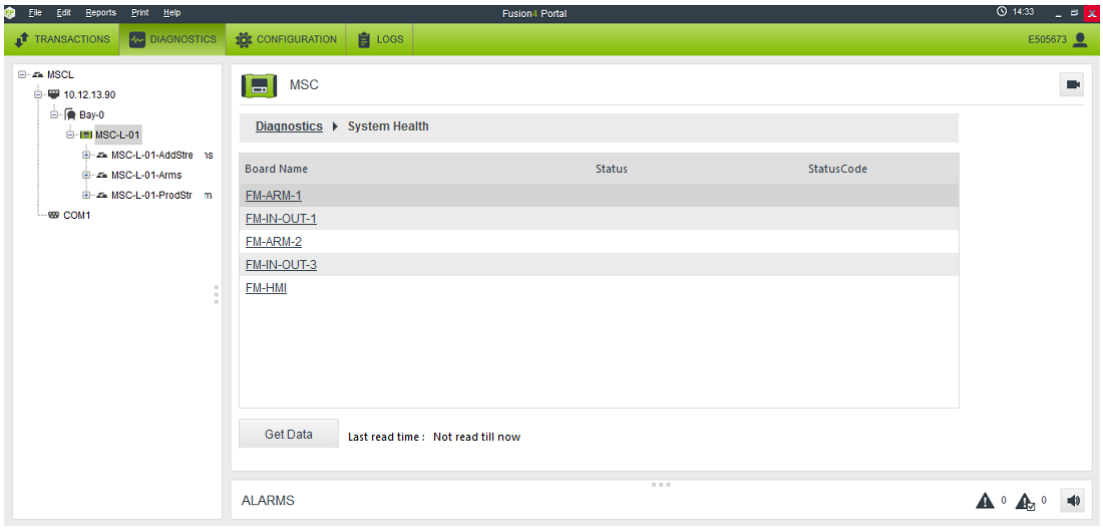
1. In the site tree, select the MSC-Ldevice whose diagnostic details you want to view.
2. From the menu bar, click the DIAGNOSTICS tab.

   The Diagnostics window for the selected MSC-Ldevice is displayed, with settings such as Dashboard and System Health.



3. Under Diagnostics, click System Health.

   The System Health window is displayed.

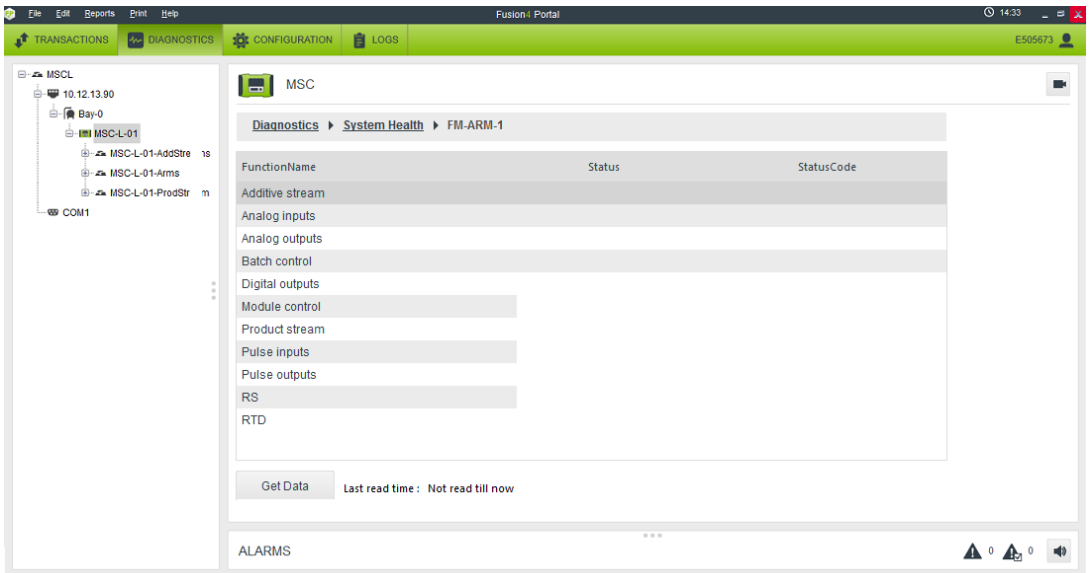


The following details are displayed by default.

- Board Name: The health status of the board connected to the selected MSC-Ldevice
- Status: The status of the board
- StatusCode: The status code of the board

4. Under Board Name, click any board name to view its system health.

   The following window is displayed.



The following details are displayed by default.

- FunctionName: The name of the function connected to the selected MSC-Ldevice
- Status: The health status of each board
- StatusCode: The error message, if any, displayed for the selected board

5. Click Get Data to get the current value from the device.

   The Last read time field displays the time when the data was last retrieved from the device.

6. Repeat the above steps to get data for other diagnostic parameters.

13 Portal Diagnostics

13.1 Logs

Fusion4 Portal enables you to view all events that occurred in Fusion4 Portal and that were logged. Furthermore, the logged events can be printed in an event log.

The following events are logged:

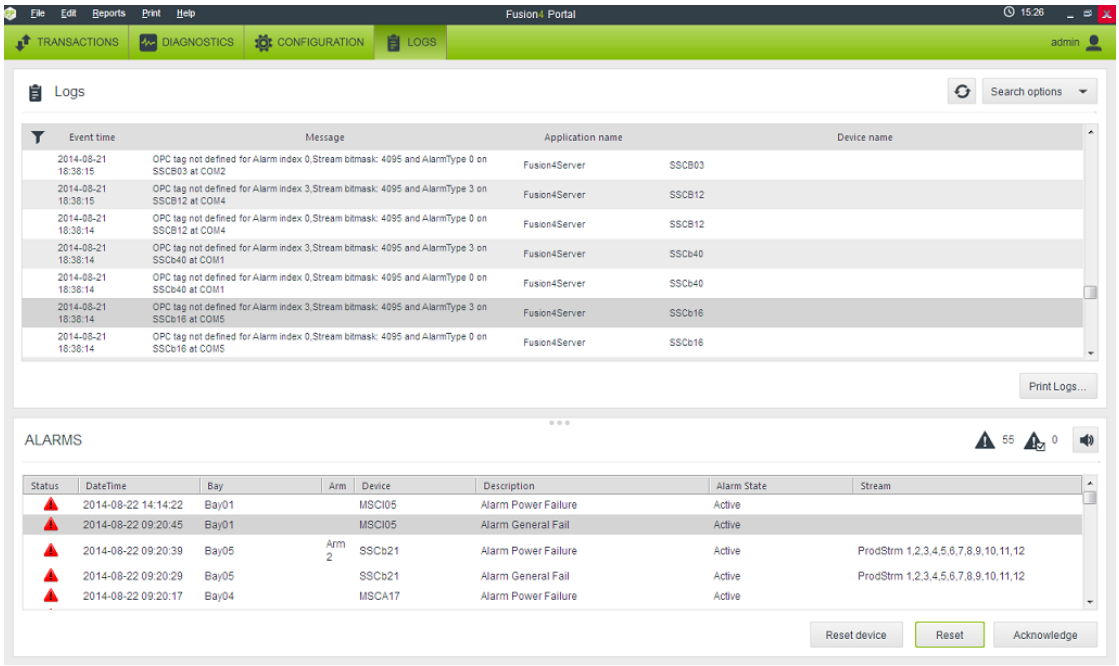
- Alarms
- Transactions
- Device resets
- Device communication status updates
- Configuration changes of the Portal
- Configuration changes of a device
- Events and Calibration Logs

13.1.1 Viewing and Printing Logged Events in Real-time

By default the Auto Refresh option is enabled, which means that the list of logged events is automatically updated. You can view and print logged events by performing the following steps:

1. In Fusion4 Portal, click the LOGS tab.

   The Logs panel is displayed.



2. Click Search options.

   The Search options for real-time view are enabled.

3. Select the type of logged events you want to view and print.

   - Select Application Log to view events logged by the Fusion4 Portal applications.
   - Select Audit Log to view logged operational events, i.e. start and shutdown of Fusion4 Portal, overwrite command for operational data items such as blend percentage and manual densities, finished transaction, recipe update (per device), device command, configuration changes, W&M sealing, and W&M seal breakage.
   - Select Combined to view events logged by the Fusion4 Portal applications and logged operational events.

4. If necessary, add or remove columns. See Section 13.1.1.1: Adding or Removing Columns for more information.

5. If necessary, filter the logged events. See Section 13.1.1.2: Filtering Messages for more information.

6. If necessary, print the logged event or events:

a. In the list with logged events select the event or events you want to print.

   The selected logged event or events are highlighted.

   > NOTE: You can select more than one logged event at a time. To select two or more logged events, press and hold the [Ctrl] key on your keyboard and then select the events. To select two or more successive logged events, you can also press and hold the [Shift] key on your keyboard and then select the first and the last event. To select all logged events displayed in the list, press and hold the [Ctrl] key and then press [A] on your keyboard.

b. Click Print Logs.

   An event log is created for the selected event(s) in Crystal Reports. In Crystal Reports you can print the event log

c. Click  to close Crystal Reports.

   Fusion4 Portal is displayed again.

7. If necessary, you can also view events that were logged on a specific date or within a specific period. See Section 13.2: Enraf Process Control Center for more information.

13.1.1.1 Adding or Removing Columns

For each logged event that is listed in the Logs panel, the following information is displayed by default (see the following table):

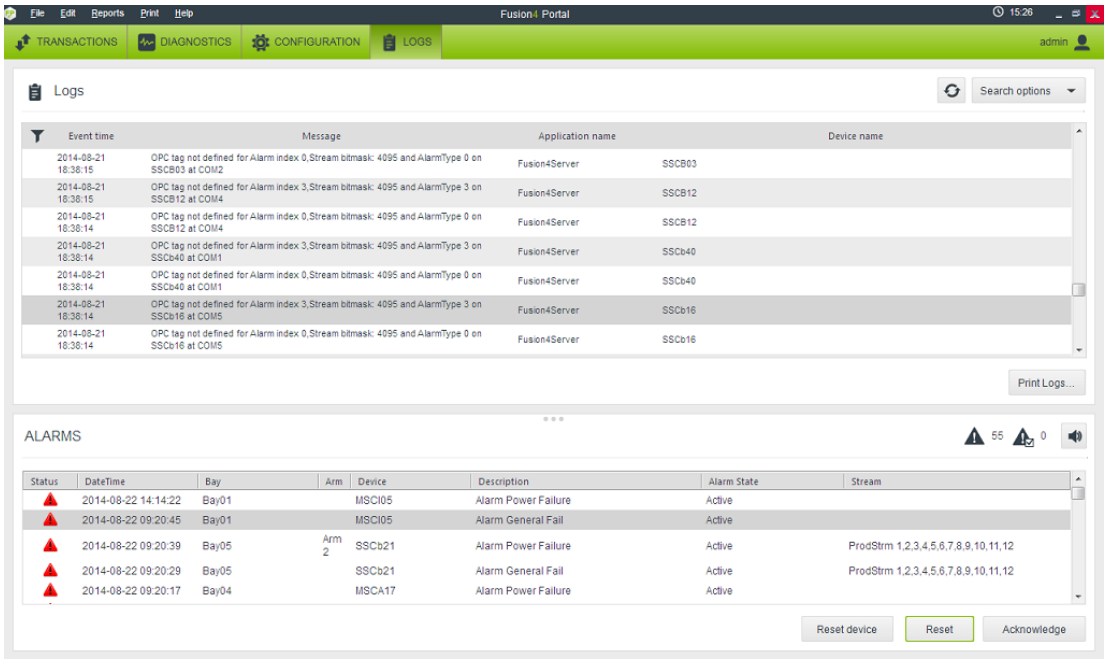
Table 13-1: Description of event details displayed by default

Item	Description
Item	Description
Event time	Displays the date and time the event occurred.
Message	Displays a description of the event.
Application name	Displays the name of the application that logged the event.
Device name	Displays the name of the device on which the logged event occurred.

In addition to this information, you can display extra information by adding columns.

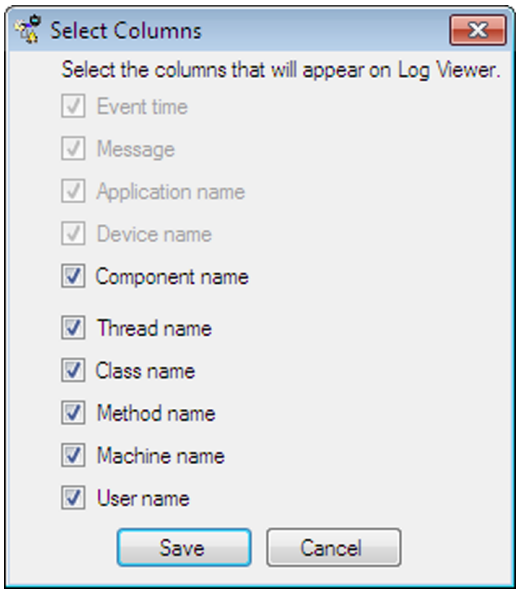
1. In Fusion4 Portal, click the Logs tab.

   The Logs panel is displayed.



2. Click ▼ to select the columns.

   The Select Columns dialog box is displayed.



3. Select the columns you want to display by selecting the check box displayed next to the column name.

4. Click Save to save the new settings. If you do not want to save the new settings, click Cancel.

   The Select Columns window is closed.

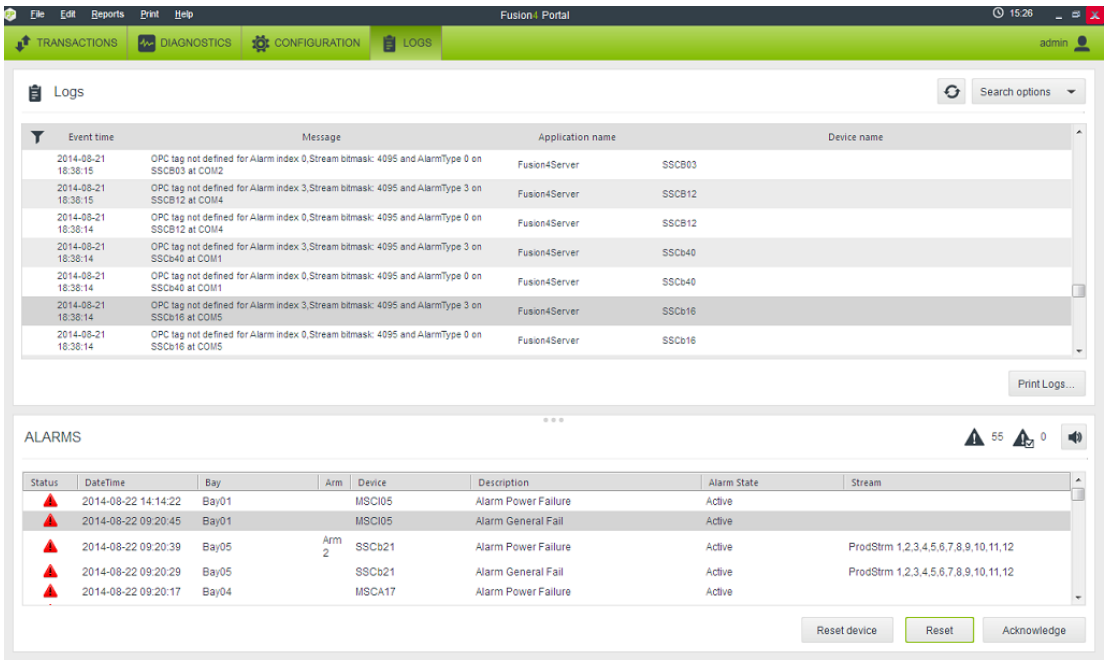
   The event data shown on the Logs tab is automatically updated.

13.1.1.2 Filtering Messages

You can filter the logged events that are displayed in the Logs panel by defining one or more search criteria.

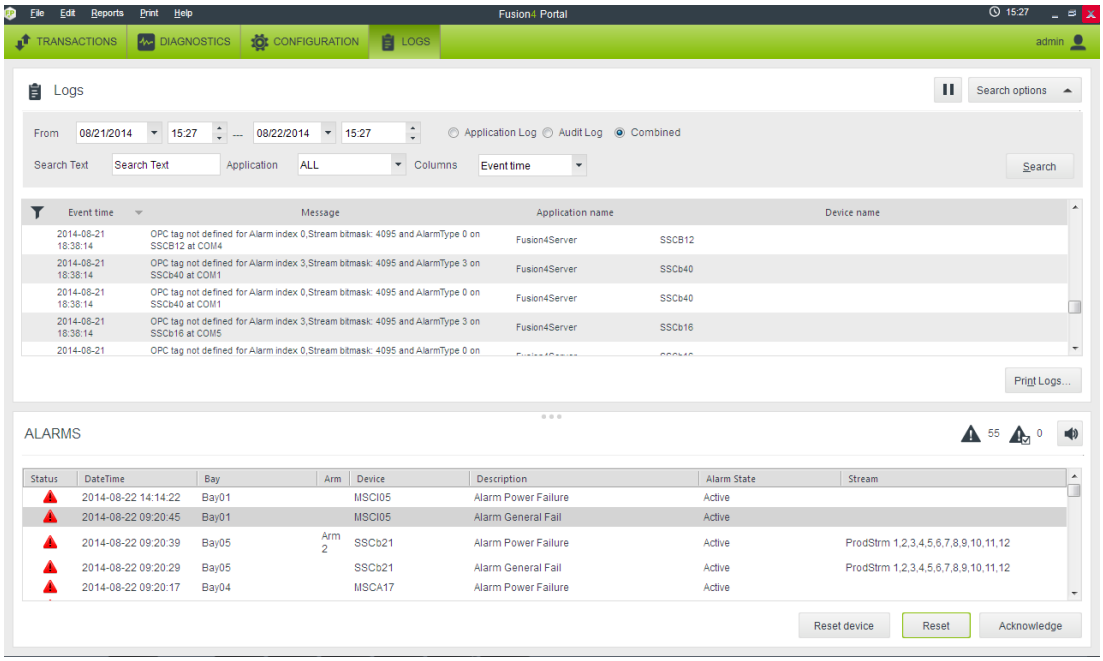
1. In Fusion4 Portal, click the Logs tab.

   The Logs panel is displayed.



2. Click Search Options.

   The search options are displayed.



3. Enter the search criteria:

   a. In the Search Text field, enter the text you want to search.

   b. From the Application list box, select the application for which you want to view the logged events matching your search criteria. The available selections are described in the following table.

Table 13-2: Description of items in Application list box

Item	Description
ALL	Displays all logged events matching the search criteria you entered in the Search field.
Print on Demand	Displays all logged events in the Print BoL application.
Fusion4 Portal	Displays all events logged by Fusion4 Portal matching the search criteria you entered in the Search field.
Fusion4 Server	Displays all events logged by the scan.
EPCC	Displays all events logged by the Enraf Process Control Center matching the search criteria you entered in the Search field.
BoL Printer	Displays all events logged by the BoL Printer application matching the search criteria you entered in the Search field.

c. From the Columns list box, select the name of the column to be searched.The available selections are described in the following table.

Table 13-3: Description of items in Columns list box

Item	Description
Item	Description
Event time	Filters on event time.
Message	Filters on message.
Application name	Filters on application name.
Device name	Filters on device name.

4. In the From entry fields, select the start date and enter the start time of the period for which you want to search the logged events.
   - You can select the start date by clicking the “arrow down” button and then selecting the date from the pop-up calendar. Use the “arrow left” and “arrow right” buttons to go the previous or next month respectively.
   - You can specify the start time by entering the time using the keyboard. You can also use the “arrow up” and “arrow down” buttons to change the time.
5. In the To entry fields, select the end date and enter the end time of the period for which you want to search the logged events.
   - You can select the end date by clicking the “arrow down” button and then selecting the date from the pop-up calendar. Use the “arrow left” and “arrow right” buttons to go the previous or next month respectively.
   - You can specify the end time by entering the time using your keyboard. You can also use the “arrow up” and “arrow down” buttons to change the time.
6. Click Search to display the events that were logged on the specified date or within the specified period of time.
7. If necessary, add or remove columns. Refer to Section 13.1.1.1: Adding or Removing Columns for more information.
8. If necessary, filter the logged event or events. Refer to Section 13.1.1.2: Filtering Messages for more information.
9. If necessary, print the logged event or events:

a. In the list with logged events select the event or events you want to print.

   The selected logged event or events are highlighted.

   > NOTE: You can select more than one logged event at a time. To select two or more logged events, press and hold the [Ctrl] key on your keyboard and then select the events. To select two or more successive logged events, you can also press and hold the [Shift] key on your keyboard and then select the first and the last event. To select all logged events displayed in the list, press and hold the [Ctrl] key and then press [A] on your keyboard.

b. Click Print Logs.

   An event log is created for the selected event(s) in Crystal Reports. In Crystal Reports you can print the event log.

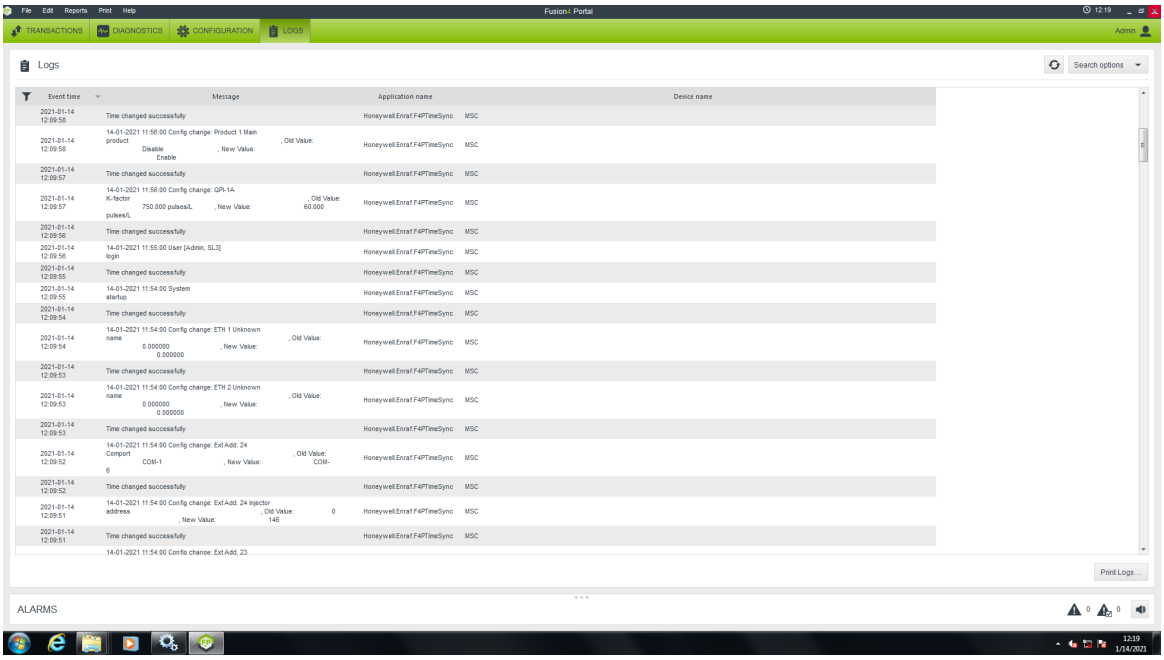
c. Click  to close Crystal Reports.

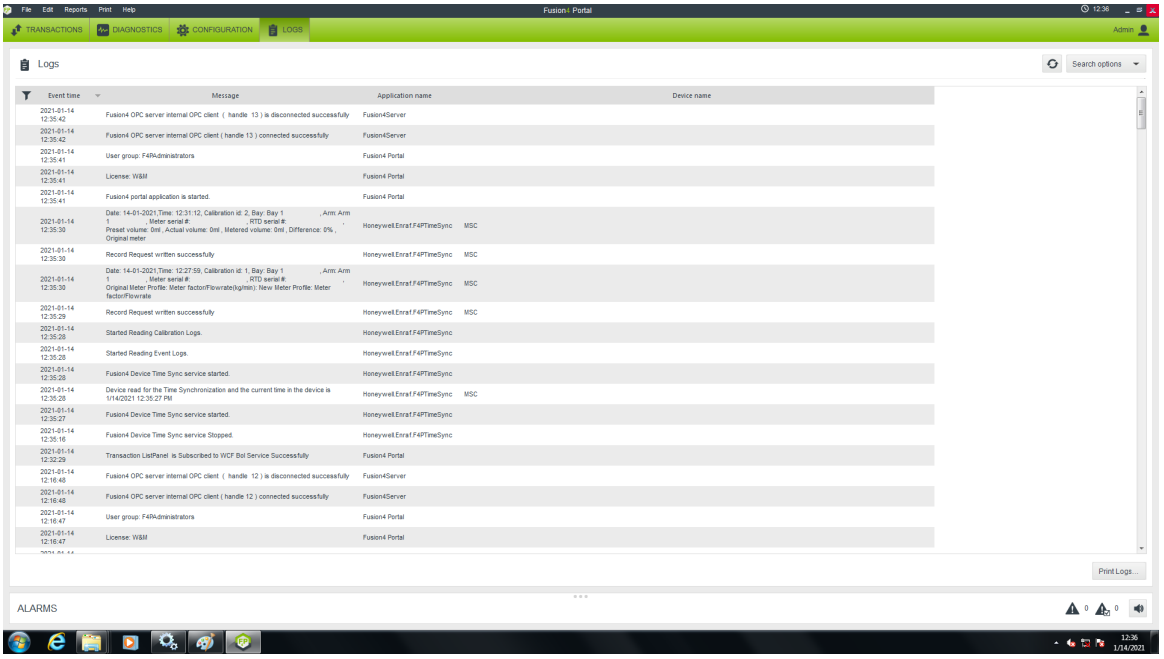
   Fusion4 Portal is displayed again.

The logged events that match your search criteria are listed on the Logs tab.

13.1.2 Viewing Event and Calibration Logs

- You can retrieve the latest event and calibration logs information of K factor and Meter factor changes periodically from Fusion4 Devices (MSCL and MSCA) in Fusion4Portal software.
- By default, the logs are retrieved every 60 minutes and this time is configurable as per user need.
- Once the log is read and displayed, it is marked processed and will not be displayed again on the Logs panel.





13.2 Enraf Process Control Center

The Enraf Process Control Center (EPCC) application is the control centre for all Enraf applications and services installed on the computer. This tool enables you to

start and stop the applications and services, and to monitor the status of these applications and services.

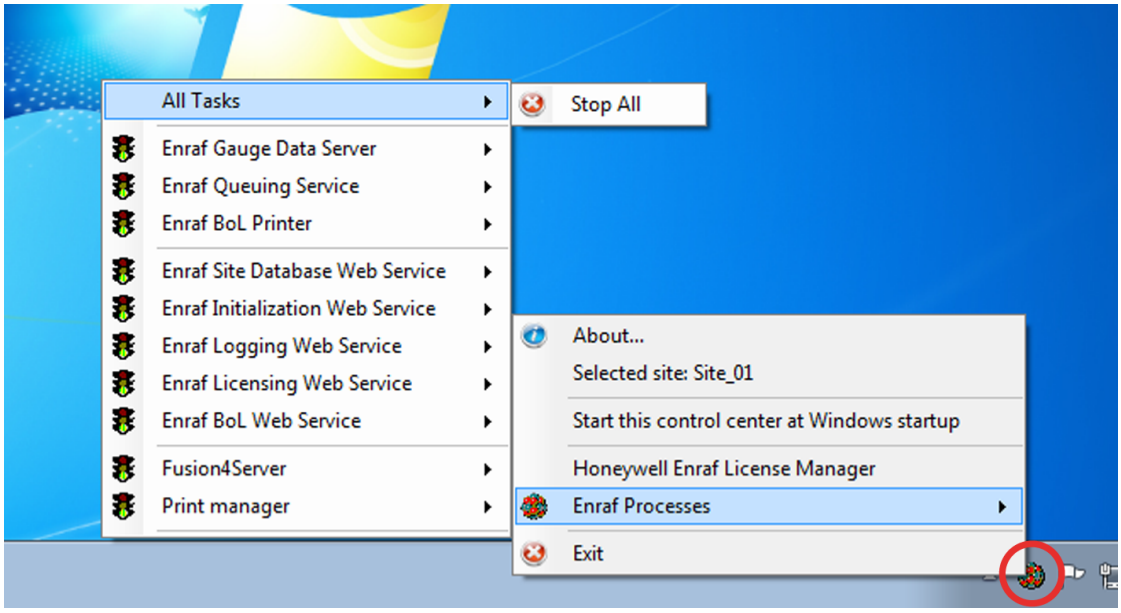
To start the EPCC, perform the following steps:

1. From the Start menu select All Programs | Enraf | System | Enraf Process Control Center.

   The EPCC icon is displayed in the notification area at the bottom right of the window.

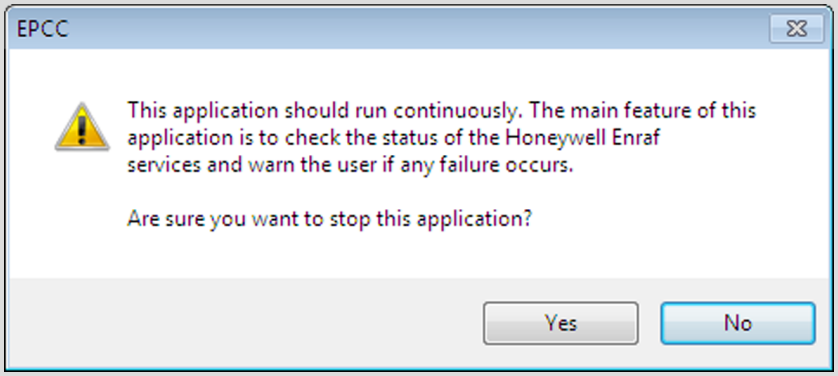
   > NOTE: If the EPCC icon is not displayed in the notification area: (1) Click (Show hidden icons) and select Customize... from the pop-up window; (2) In the drop-down list right next to the EPCC icon, select Show icon and notifications; (3) Click OK to save the changes and to close the window. The EPCC icon is displayed in the notification area.To view the EPCC user interface, right-click the EPCC icon in the notification area.

   The EPCC displays a list of all Enraf applications and services installed on your computer.



   > NOTE: By default the EPPC is started during Windows startup.

CAUTION: The EPCC should run continuously. If you close this application by clicking Exit in the EPCC user interface, the following warning is displayed:



13.2.1 Types of Applications and Services in EPCC

The EPCC displays a list of all Enraf software applications and services installed on your computer. These applications and services can be classified as follows:

Type of Application	Description
Windows Services	These are the services/applications programmed to support some high level applications at a low level. Enraf Software Applications comprises of many such services. Examples: Enraf Gauge Data Server (EGDS) and Enraf BoL Printer.
Web Services hosted in Windows Services	These are the Windows Communication Foundation (WCF) services also called as Web Services, which are hosted in Windows Services. These services interact across the network with applications which are installed on different machines. Examples: Enraf BoL Web Service and Enraf Initialisation Service.
Server applications	The server applications are generally started through specific clients. Therefore, the EPCC does not provide a 'start' option for these applications, only a 'stop' option. Example: Fusion4 Server.
Shortcuts	EPPC provides shortcuts for applications which are not required to always run on your computer. An examples is the Enraf License Manager.

13.2.2 Starting and Stopping an Application or Service through EPCC

> NOTE: The EPCC enables you to start an application or service when it stopped running. When an application or service continues to stop running each time you started it, contact the engineer/supervisor or Guidant Support.

To start or stop an application or service through the EPCC, perform the following steps:

1. Right-click the EPCC icon in the notification area.

   The EPCC user interface is displayed.

2. In the EPCC user interface, select Enraf Processes.

   The Enraf applications and services installed on the computer are displayed

3. In the EPCC user interface, select the application or service you want to start or stop. Then click:

   - Start to start the application or service. This button is only active if the application or service is not running.
   - Stop to stop the application or service. This button is only active if the application or service is running.

> NOTE: If you want to stop all applications and services, select All Tasks and then Stop All.

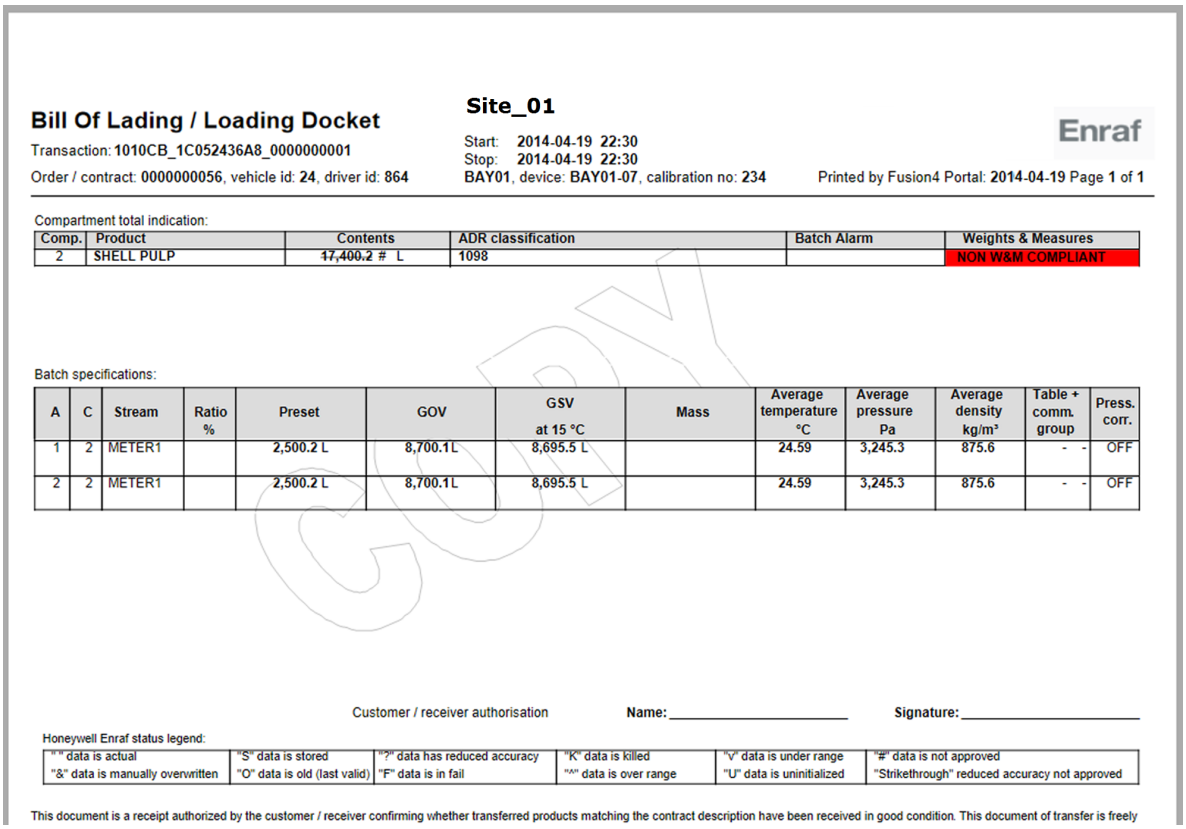
13.3 Device (1010CB) Error Status Codes

When there is a disturbance during the transfer of a batch, the system generates an alarm. The number of this alarm is displayed in the Batch Alarm column on the Bill of Lading (BoL). For a description of the error status codes, refer to:

- 1010CB Protocol Manual
- Fusion4 SSC-A Installation & Operation Manual

- Fusion4 SSC-B Installation & Operation Manual
- Fusion4 MSC-A Installation & Operation Manual
- Fusion4 MSC-L Installation & Operation Manual

In case of a Weights and Measures compliant system, the text 'Unintended stop' is displayed instead of a number. In an example of a Bill of Lading for a 1010CB is shown.



Bill Of Lading / Loading Docket

Site_01

Transaction: **1010CB_1C052436A8_0000000001**

Start: **2014-04-19 22:30**
Stop: **2014-04-19 22:30**

Enraf

Order / contract: **0000000056**, vehicle id: **24**, driver id: **864**
BAY01, device: **BAY01-07**, calibration no: **234**
Printed by Fusion4 Portal: **2014-04-19** Page **1** of **1**

Compartment total indication:

Comp.	Product	Contents	ADR classification	Batch Alarm	Weights & Measures
2	SHELL PULP	17,400.2 # L	1098		NON W&M COMPLIANT

Batch specifications:

A	C	Stream	Ratio %	Preset	GOV	GSV at 15 °C	Mass	Average temperature °C	Average pressure Pa	Average density kg/m³	Table + comm. group	Press. corr.
1	2	METER1		2,500.2 L	8,700.1 L	8,695.5 L		24.59	3,245.3	875.6	- -	OFF
2	2	METER1		2,500.2 L	8,700.1 L	8,695.5 L		24.59	3,245.3	875.6	- -	OFF

Customer / receiver authorisation **Name:** _____ **Signature:** _____

Honeywell Enraf status legend:

" " data is actual	"S" data is stored	"?" data has reduced accuracy	"K" data is killed	"v" data is under range	"#" data is not approved
"&" data is manually overwritten	"O" data is old (last valid)	"F" data is in fail	"^" data is over range	"U" data is uninitialized	"Strikethrough" reduced accuracy not approved

This document is a receipt authorized by the customer / receiver confirming whether transferred products matching the contract description have been received in good condition. This document of transfer is freely

13.4 Troubleshooting

> NOTE: In case of an error or malfunction always check the Logs panel in Fusion4 Portal first (see Section 13.1: Logs).

Problem	Cause	Solution
Installation		
Fusion4 Portal will not work properly after installation is completed.	Installation of Fusion4 Portal was completed without correct password for “mngr” user account.	Correct log on for Enraf BoL Printer service. See Section 13.4.1: Correcting Log On for Enraf BoL Printer Service and Section 13.4.2: Configuring the DCOM mngr Settings for Fusion4Server for more information.
Transactions performed are not retrieved by Fusion4 Portal.	Transactions performed are not retrieved if the devices have older version of firmware.	Ensure that the devices have mentioned versions or later versions of the firmware. • MSC-L/MSC-A: R301 C1-1.05 • SSC-A/SSC-B: A2419 • 1010CB: P6-007-1010A-CB-VEO05.002-2594 Check the real device for the appropriate firmware versions. For more information, refer the “Infor” section for SSC-A and SSC-B and the “Info” section for MSC-A and MSC-L.
Operation		
Communication error	The terminal server goes to hung state after heavy and prolonged operation or due to third party applications causing CPU or memory overload.	Restart the computer running Fusion4 Portal if the issue persists. Restarting the computer does not result in loss of transaction data or log data. However, it is recommended to restart the computer only during maintenance hours in order not to lose monitoring.

Problem	Cause	Solution
Device transactions are not retrieved	The device serial number in the real device is not configured properly.	• In Fusion4 Portal, check the log for an "*" for a specific device transaction. • Check the real device for the appropriate serial number. For more information, refer the "Infor" section for SSC-A and SSC-B and the "Info" section for MSC-A and MSC-L. • Contact the Fusion4 device Sales/Service Engineer to configure the appropriate serial number. The transactions with "*" must be manually settled and Fusion4 Portal must be restarted.
Printer		

Problem	Cause	Solution
The printer is not printing correctly or is not printing at all.	The printer is not connected to the computer.	Connect the printer to the computer.
	There is a communication failure between the printer and the computer.	Check if the cables of the printer are connected properly to the computer.
	The printer is switched off.	Switch the printer on.
	There is no paper in the paper tray of the printer.	Insert paper in the paper tray.
	The ink or toner cartridge is (almost) empty.	Replace the cartridge.
	Printer is not configured as default printer for mngr account.	Configure printer as default printer for mngr account. Refer to Section 5.3.5: Configuring the Default Printer for more information.
The localized characters are not displayed in the reports when the reports as saved as localized PDF files using the "Print to file" option.	The "Arial Unicode MS" font is not available in the system.	Download and install the "Arial Unicode MS" font from http://fontsov.com/download/12730.html.
Hard Disk		

Problem	Cause	Solution
The transaction data is not saved.	The hard disk used for storing the transaction data is full.	Make a backup of the transaction data on another hard disk. Subsequently, you can remove (part of) the transaction data from the hard disk normally used for storing the transaction data.

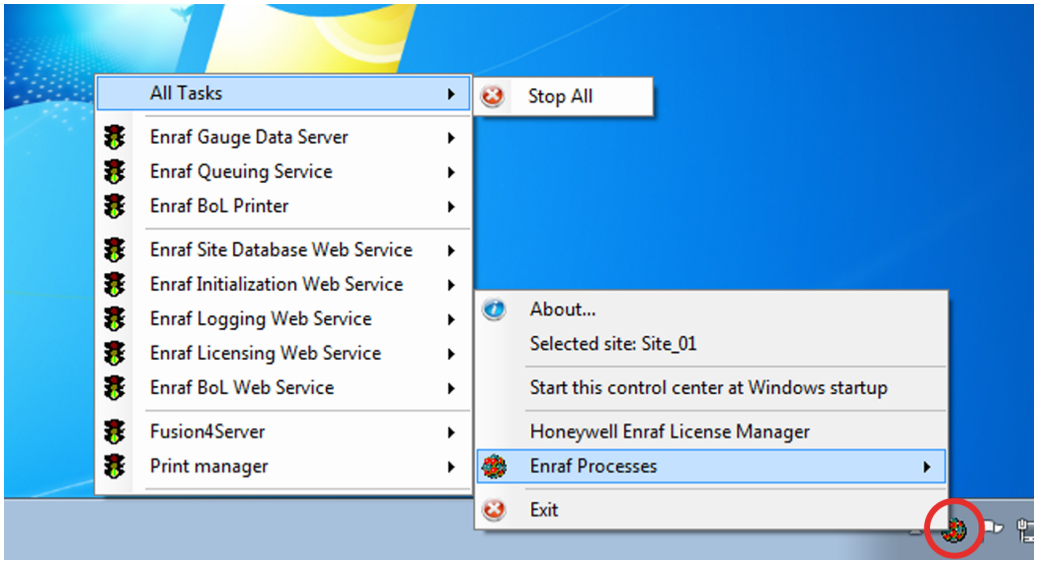
13.4.1 Correcting Log On for Enraf BoL Printer Service

During the installation of Fusion4 Portal, you are prompted to enter the password of the "mngr" user account if this user account already exists on the computer. If you entered the wrong password, a message is displayed. If you cannot remember the password for the "mngr" account, you must click Cancel in the mngr Account window for the installation to continue. The installation of Fusion4 Portal is completed. However, Fusion4 Portal does not work properly until the incorrect password issue is fixed.

To fix the password of the "mngr" user account, perform the following steps:

1. Stop all services and exit the EPCC.

   a. Right-click the EPCC icon in the system tray.



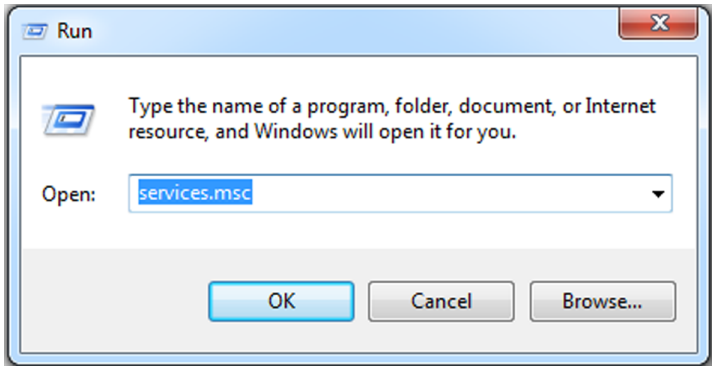
   b. In the EPCC user interface, choose Enraf Processes | All Tasks | Stop All to

stop all services

c. In the EPCC user interface, select Exit to exit the EPCC.

2. From the Start menu, select Run.

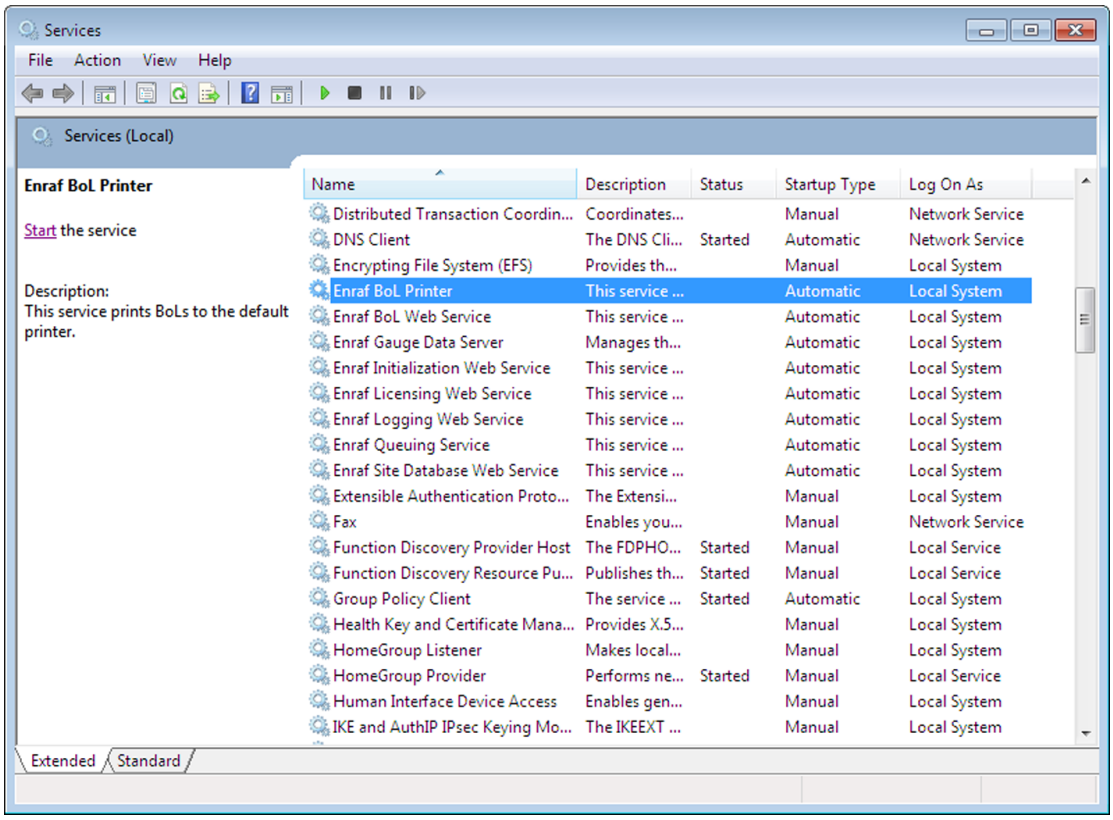
   The Run dialog box is displayed.



> NOTE: If Run... is not displayed in the Start menu: (1) Right-click on the Start menu icon and select Properties from the pop-up menu; (2) On the Start Menu tab in the Taskbar and Start Menu Properties window click Customize...; (3) In the Customize Start Menu window select the Run command check box and click OK to save the changes and to close the window; (4) Click OK to save the changes and to close the Taskbar and Start Menu Properties window.

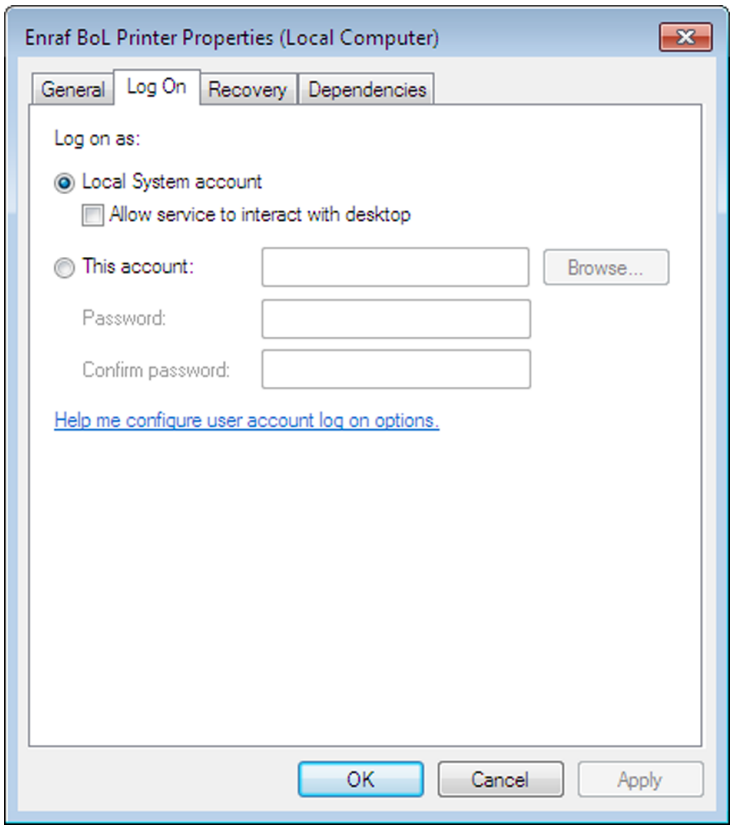
3. Enter services.msc in the Run dialog box. Then click OK.

   The Services window is displayed.



4. Right-click the Enraf BoL Printer service, and select Properties from the pop-up menu.

   The Enraf BoL Printer Properties window is displayed.

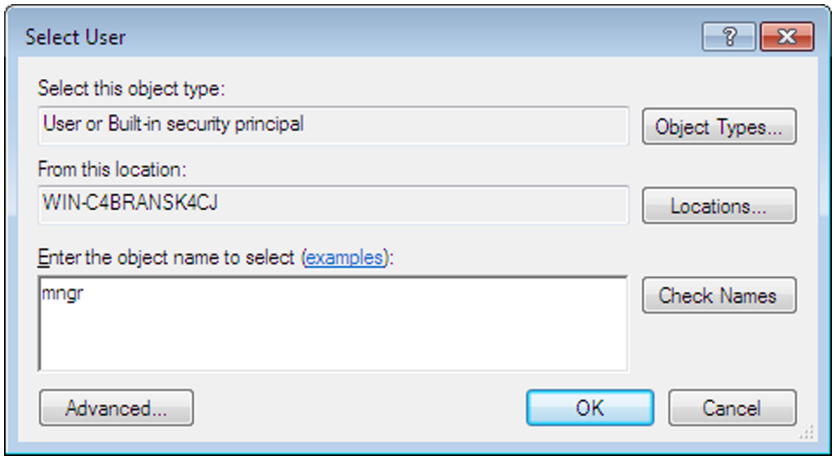


5. On the Log On tab enter the properties of the “mngr” user account:

   a. Select This account.

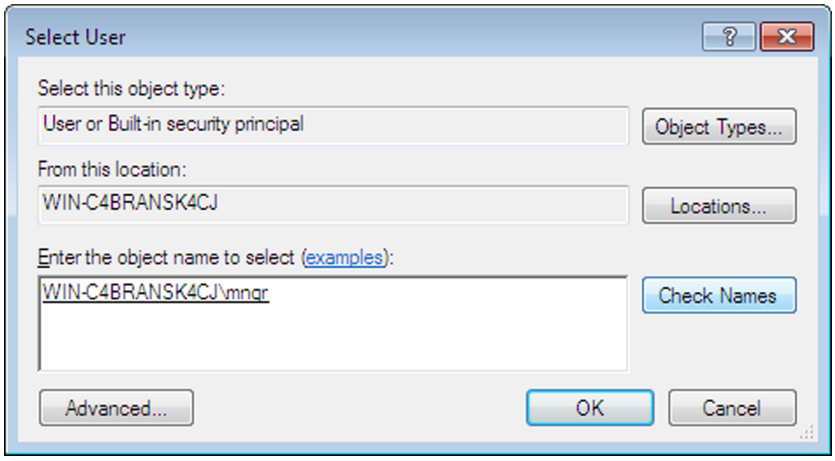
   b. Click Browse.

      The Select User window is displayed



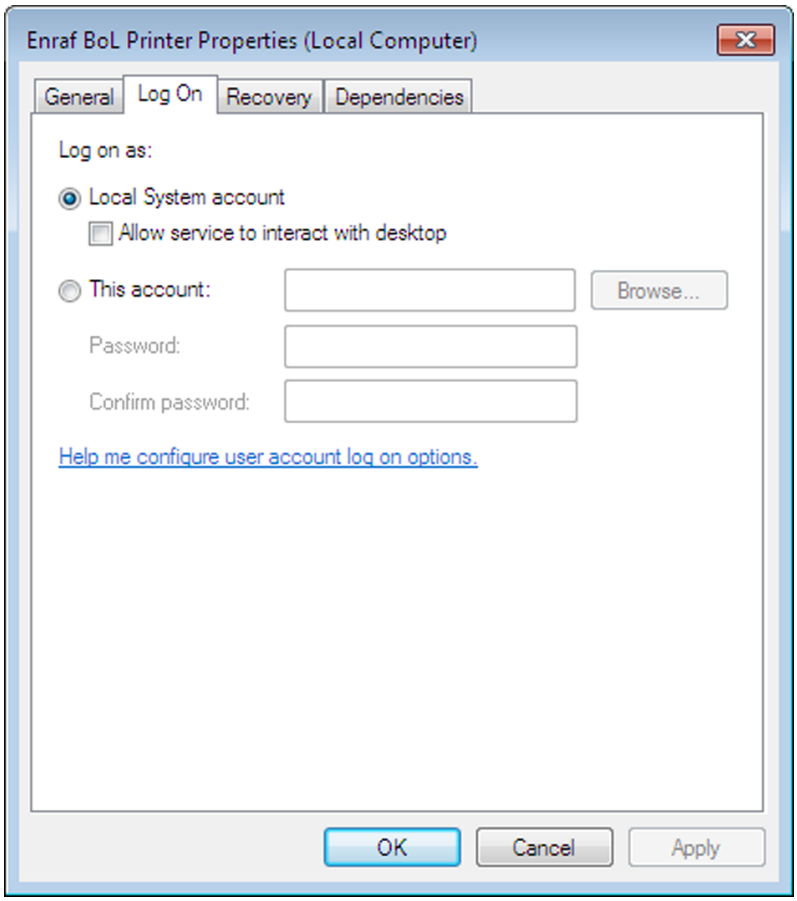
c. Enter mngr in the Enter the object name to select text box. Then click Check Names.

   If the name of the user account you entered is located, the name including its location is displayed in the text box.



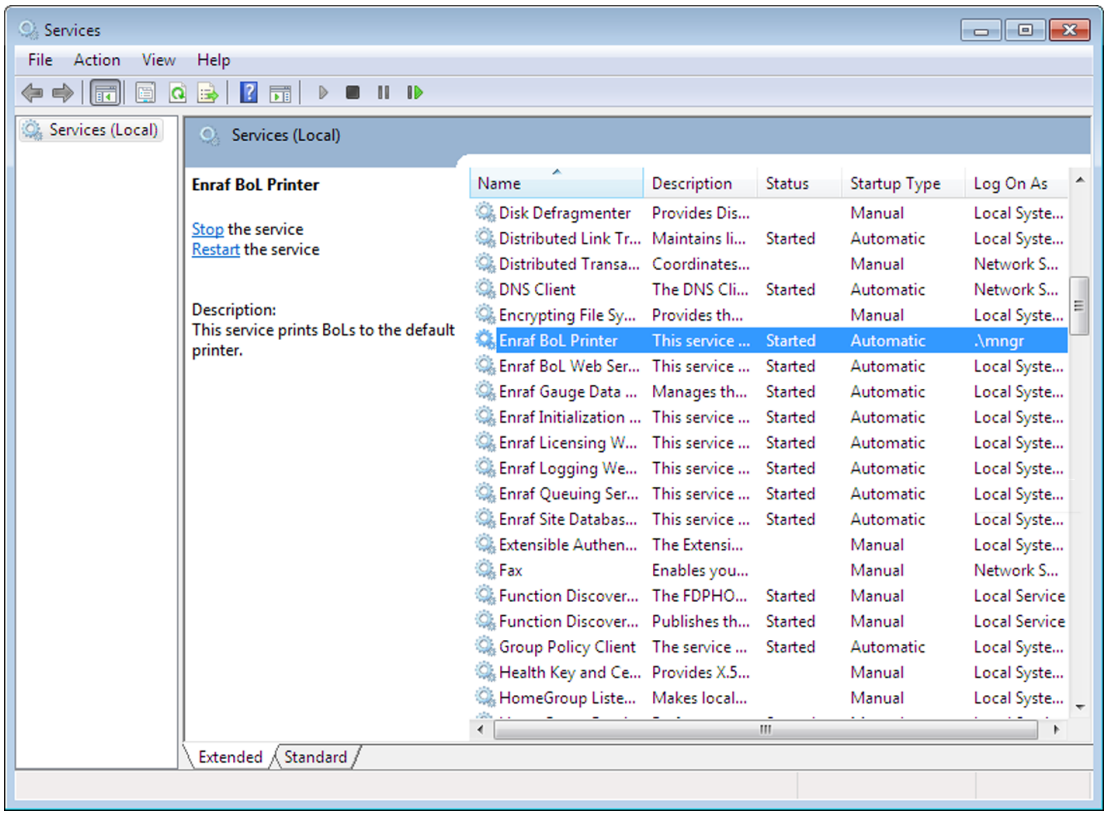
6. Click OK to save the changes and to close the window.

   The Enraf BoL Printer Properties window is displayed again.



7. Enter the (correct) password of the “mngr” user account in both the Password and Confirm password entry fields. Then click OK to save the changes and to close the window.

   The Services window is displayed again. The name of the “mngr” user account is displayed in the Log on as column.



8. Close all windows and restart the computer.
9. After restart of the computer check if the EPCC is started automatically, and if all Fusion4 Portal services are running.

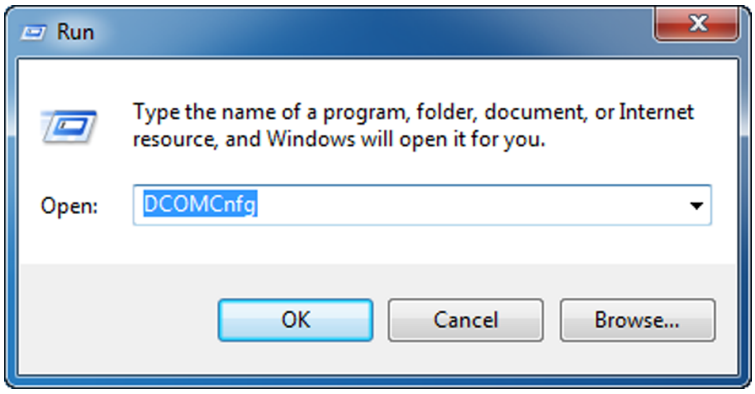
   If the EPCC is not started automatically, start it manually (Start | All Programs | Enraf | System | Enraf Process Control Center).

13.4.2 Configuring the DCOM mngr Settings for Fusion4Server

Perform the following steps to configure the DCOM mngr settings for Fusion4Server:

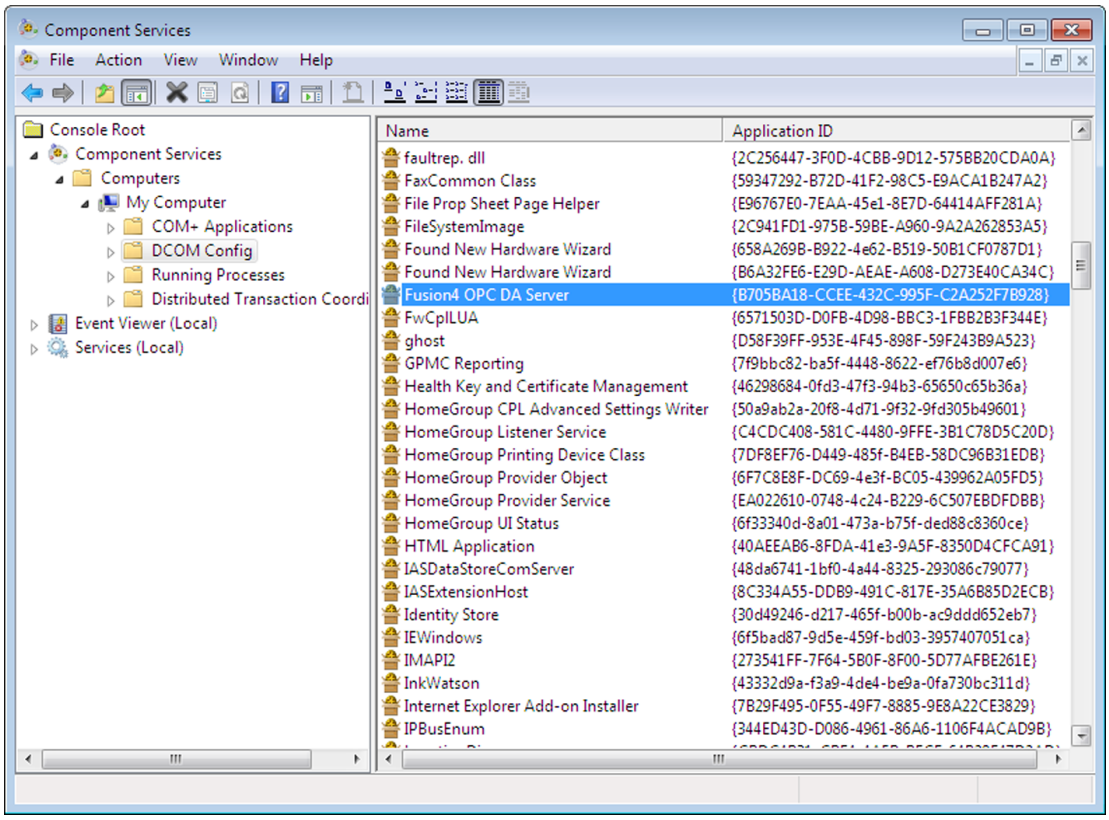
1. Log on to the computer with the “mngr” account.
2. Go to Start | Run....

   The Run window is displayed.



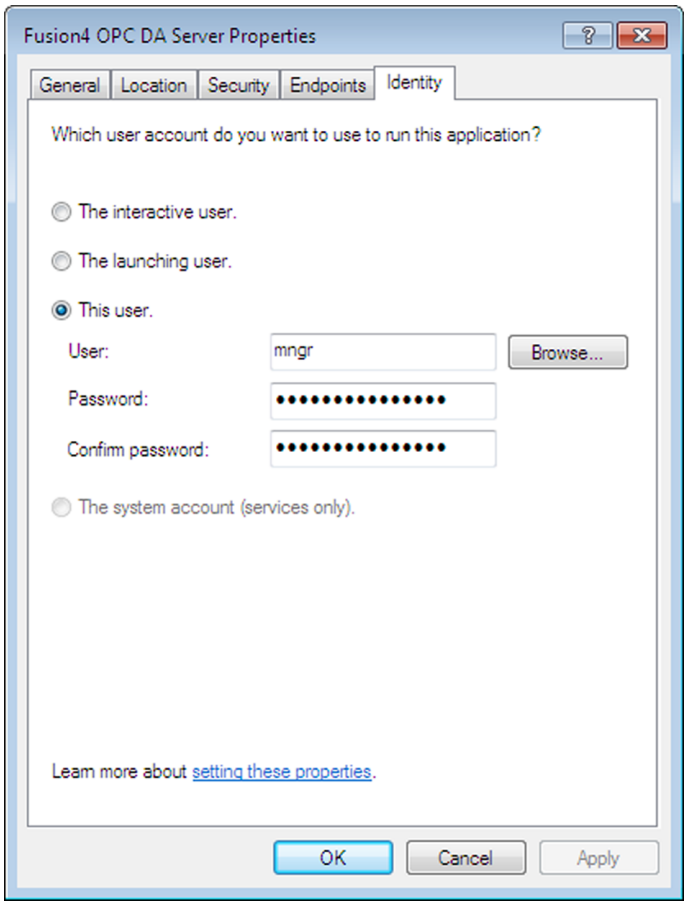
NOTE: If Run... is not displayed in the Start menu: (1) Right-click on the Start icon and select Properties from the pop-up menu; (2) In the Taskbar and Start Menu Properties window go to the Start Menu tab; (3) Click Customize...; (4) Select the Run command check box; (5) Click OK to save the changes and to close the window, (6) Click OK to save the changes and to close the window.

3. In the text field after Open: enter DCOMCnfg and click OK. The Component Services window is displayed.



4. Go to Console Root | Component Services | Computers | My Computer | DCOM Config.
5. Right-click Fusion4 OPC DA Server.

   The Fusion4 OPC DA Server Properties window is displayed.



6. Click the Identity tab.
7. Enter the password of the “mngr” user account in both the Password and Confirm password entry fields. Then click OK to save the changes and to close the window.

   The Component Services window is displayed.

8. Close the Component Services window.

13.5 Maintenance

To ensure proper operation, it is recommended that the computer running the Fusion4 Portal application is restarted periodically.

- In a site where 1,000 or more transactions are performed daily, a restart of the computer is required once every two months.
- In a site where less than 1,000 transactions are performed daily, a restart of the computer is required once every 3 months.

14 Fusion4 Portal Topology

14.1 Introduction

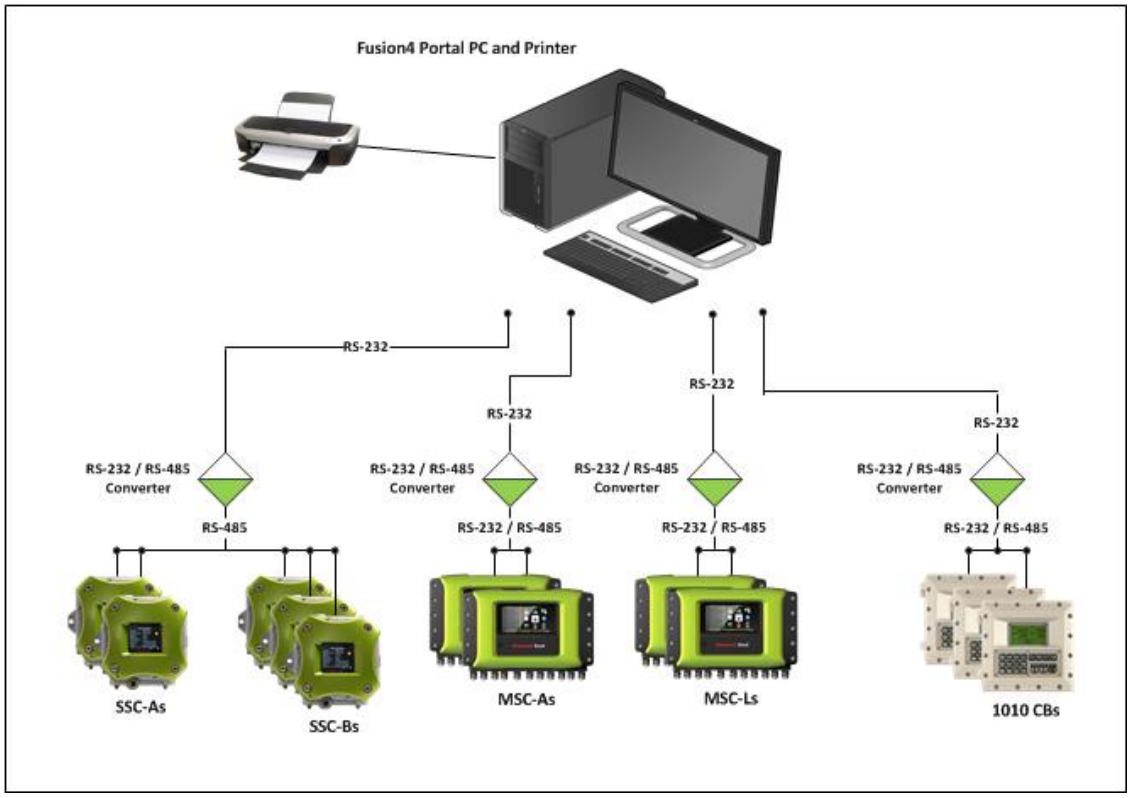
The 1010CB devices and Fusion4 devices (SSC-As, SSC-Bs, MSC-As, and MSC-Ls) can be connected to the Fusion4 Portal computer in various ways:

- Through an RS-232/RS-485 connection using an RS-232/RS-485 converter.
- Through an RS-232/RS-485 to Ethernet connection using a terminal server and an Ethernet switch.
- Through an Ethernet connection using an Ethernet switch. This type of connection is currently only supported by the MSC-A and MSC-L.
- Through a combination of the above.

> NOTES:
>
> 1. The 1010CB supports RS-232 and RS-485. The SSC-A and the SSC-B support only RS-485. The MSC-A and MSC-L supports RS-232, RS-485 and Ethernet.
> 2. Multiple devices can be connected to one port through a multidrop bus.

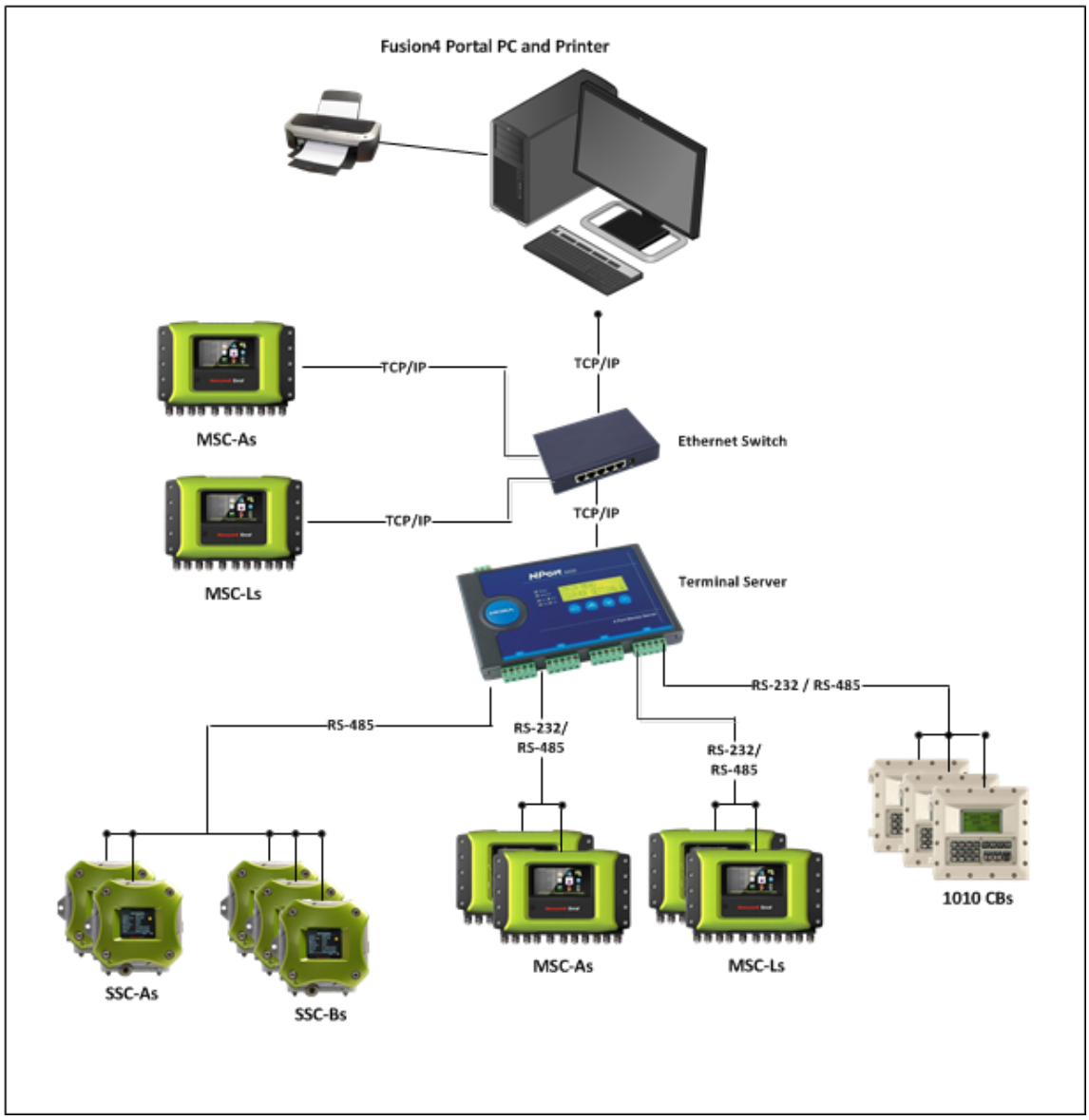
The following figure displays an example of a network topology in which the devices are connected to the Fusion4 Portal computer through an RS-232/RS-485 connection using an RS-232/RS-485 converter.

Figure 14-1: Fusion4 Portal serial network topology



The following figure displays an example of a network topology in which the devices are connected to the Fusion4 Portal computer through an RS-232/RS-485 to Ethernet connection using a terminal server and Ethernet switch.

Figure 14-2: Fusion4 Portal Ethernet network topology with terminal server



NOTE:

- This configuration is supported by having virtual COM ports on PC mapped to devices on serial lines.
- We recommend you to use “Managed switches” (ports are not opened for external/other communication) for secured communication.

14.2 1010CBLoad Controller

For connecting a 1010CB load computer to a PC running Fusion4 Portal, refer to the 1010CB Card Descriptions and Wiring Manual.

14.3 Multi-Stream Controller for Loading

A Multi-Stream Controller for Loading (MSC-L) can be connected to a PC running Fusion4 Portal in a number of ways, depending on the connectivity options of the PC. The following types of connection can be distinguished:

- Serial connections, see section Section 14.4.1: Connecting MSC-A to Fusion4 Portal through Serial Connection.
- Ethernet connections, see section Section 14.4.2: Connecting MSC-A to Fusion4 Portal through Ethernet Connection.

14.3.1 Connecting MSC-L to Fusion4 Portal through Serial Connection

There are a number of ways to connect an MSC-L to a PC running Fusion4 Portal through a serial connection. The possible connections are:

- RS-485 half-duplex serial connection between the MSC-L and the PC running Fusion4 Portal, see section Section 14.3.1.1: RS-485 Half-Duplex Serial Connection.
- RS-485 full-duplex serial connection between the MSC-L and the PC running Fusion4 Portal, see section Section 14.3.1.2: RS-485 Full-Duplex Serial Connection.
- RS-485 to RS-232 half-duplex serial connection between the MSC-L and the PC running Fusion4 Portal using an RS-232 to RS-485 converter, see section Section 14.3.1.3: RS-485 to RS-232 Half-Duplex Serial Connection.
- RS-485 to RS-232 full-duplex serial connection between the MSC-L and the PC

running Fusion4 Portal using an RS-232 to RS-485 converter, see section Section 14.3.1.4: RS-485 to RS-232 Full-Duplex Serial Connection.

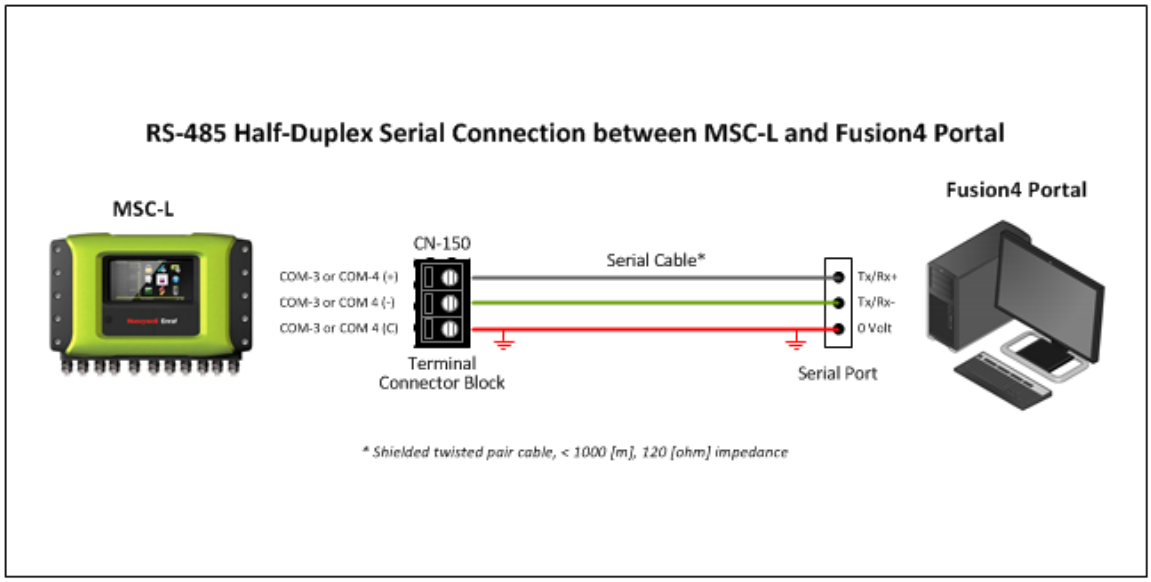
When connecting an MSC-L to a PC running Fusion4 Portal keep the following in mind:

- For an RS-485 half-duplex connection preferably use terminal connector block CN-150 or terminal connector block CN-151 on the CAN-HMI-MSC board of the MSC-L in order to guarantee optimum performance. If terminal connector block CN-151 is used, it must be configured for RS-485 half-duplex communication using the RS COMM mode switch SW2 on the CAN-HMI-MSC board.
- For an RS-485 full-duplex connection preferably use terminal connector block CN-151 on the CAN-HMI-MSC board of the MSC-L in order to guarantee optimum performance. Furthermore, terminal connecter CN-151 must be configured for RS-485 full-duplex communication using the RS COMM mode switch SW2 on the CAN-HMI-MSC board.
- For communications between the MSC-L and the PC FlexConn protocol is used.
- When a multidrop bus connection is used maximum 5 devices or 25 streams, whichever limit is reached first, can be connected in order to guarantee optimum performance.
- A site can have maximum 10 serial multidrop bus connections, i.e. maximum 50 devices or 250 streams, whichever limit is reached first.
- If the connection to the MSC-L represents the last link in a multidrop bus connection, then the bus must be terminated by setting jumpers JP7 and JP8 on the CAN-HMI-MSC board to the TERM (terminated) position. The serial bus will be terminated with a 120 Ohms resistor.

14.3.1.1 RS-485 Half-Duplex Serial Connection

The following figure schematically shows an RS-485 half-duplex serial connection between an MSC-L and a PC with Fusion4 Portal, in which terminal connector block CN-150 is used.

Figure 14-3: RS-485 half-duplex serial connection between MSC-L and Fusion4 Portal (CN-150)



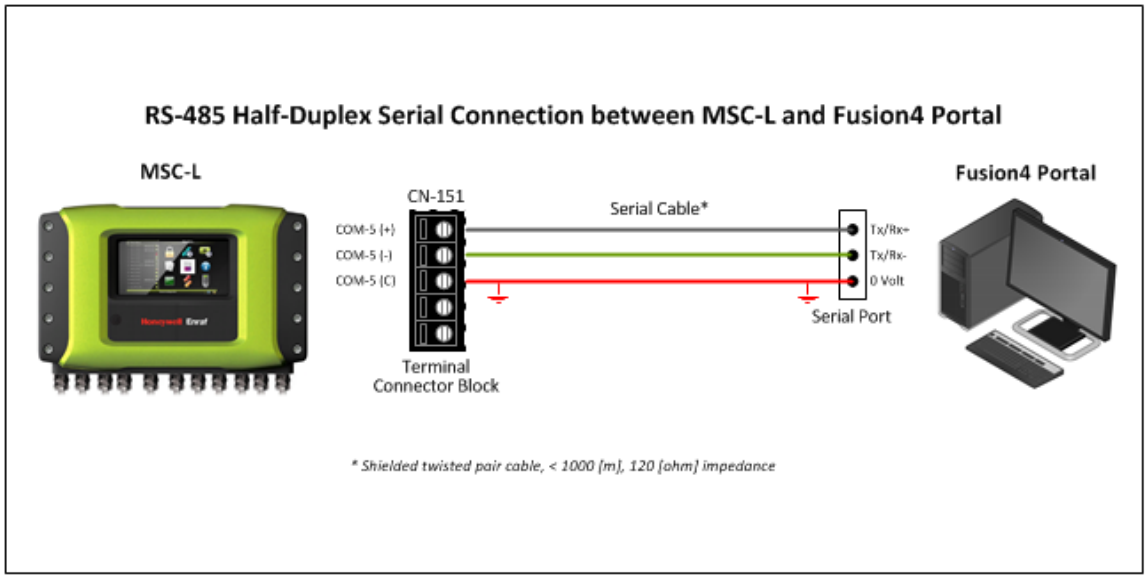
The following table describes the layout of terminal connector block CN-150 in a RS-485 half-duplex serial connection.

Table 14-1: Layout of Terminal Connector Block CN-150

Connector		Signal Name	Signal Description
ID	PIN		
CN-150	COM-3 (+)	RS485_A	2W RS-485 Tx+/Rx+
	COM-3 (-)	RS485_B	2W RS-485 Tx-/Rx-
	COM-3 (C)	RS485_0V	0 Volt
	COM-4 (+)	RS485_A	2W RS-485 Tx-/Rx+
	COM-4 (-)	RS485_B	2W RS-485 Tx-/Rx-
	COM-4 (C)	RS485_0V	0 Volt

The following figure schematically shows an RS-485 half-duplex serial connection between an MSC-L and a PC with Fusion4 Portal, in which terminal connector block CN-151 used.

Figure 14-4: RS-485 half-duplex serial connection between MSC-L and Fusion4 Portal (CN-151)



The following table describes the terminal layout of connector CN-151 in a RS-485 half-duplex serial connection.

Table 14-2: Layout of Terminal Connector CN-151

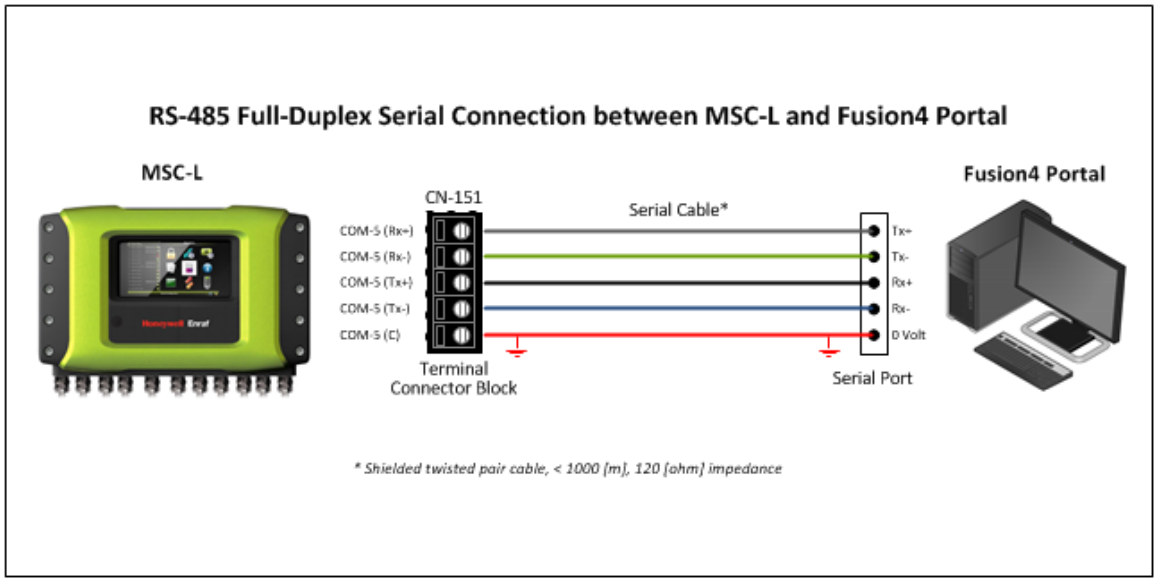
Connector		Signal Name	Signal Description
ID	Pin		
CN-151	COM-5 (+)	RS485_A	2W RS-485 Tx+/Rx+
	COM-5 (-)	RS485_B	2W RS-485 Tx-/Rx-
	COM-5 (C)	RS485_0V	0 Volt
	N/A	N/A	N/A
	N/A	N/A	N/A

NOTE: Terminal connector block CN-151 must be configured for RS-485 half-duplex communication using the RS COMM mode switch SW2 on the CAN-HMI-MSC board.

14.3.1.2 RS-485 Full-Duplex Serial Connection

The following figure schematically shows an RS-485 full-duplex serial connection between an MSC-L and a PC with Fusion4 Portal.

Figure 14-5: RS-485 full-duplex serial connection between MSC-L and Fusion4 Portal



The following table describes the terminal layout of connector CN-151 in an RS-485 full-duplex connection.

Table 14-3: Layout of Terminal Connector CN-151

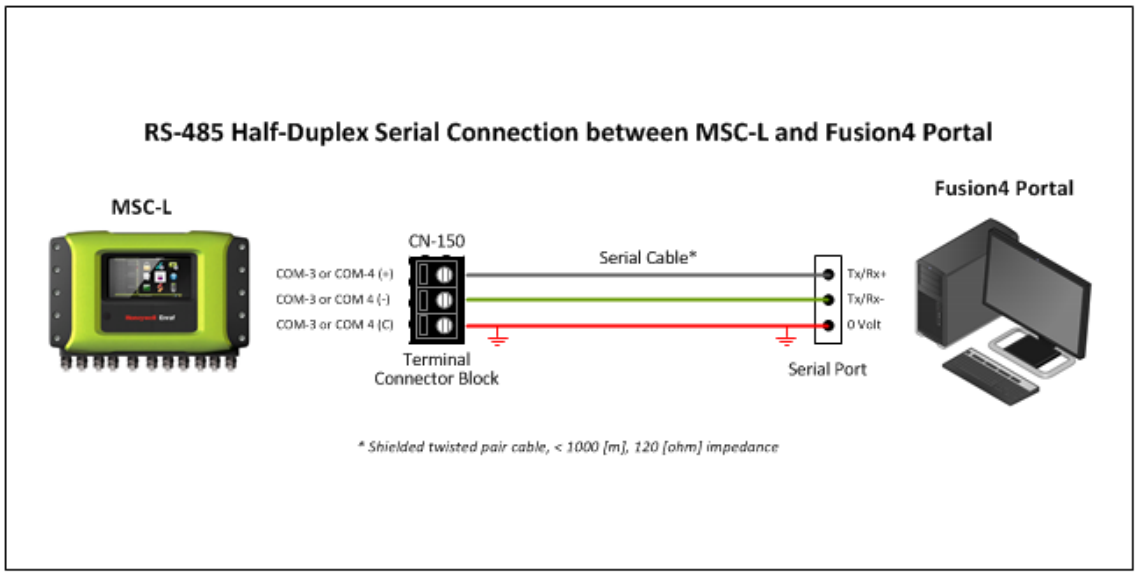
Connector		Signal Name	Signal Description
ID	Pin		
CN-151	COM-5 (Rx+)	RS485_A	4W RS-485 Rx+
	COM-5 (Rx-)	RS485_B	4W RS-485 Rx-
	COM-5 (Tx+)	RS485_Y	4W RS-485 Tx+
	COM-5 (Tx-)	RS485_Z	4W RS-485 Tx-
	COM-5 (C)	RS485_0V	0 Volt

NOTE: Terminal connector block CN-151 must be configured for RS-485 full-duplex communication using the RS COMM mode switch SW2 on the CAN-HMI-MSC board.

14.3.1.3 RS-485 to RS-232 Half-Duplex Serial Connection

The following figure schematically shows an RS-485 to RS-232 half-duplex serial connection between an MSC-L and a PC with Fusion4 Portal, in which an RS-232 to RS-485 converter is used.

Figure 14-6: RS-485 to RS-232 half-duplex serial connection between MSC-L and Fusion4 Portal



The following table describes the layout of terminal connector block CN-150 in an RS-485 to RS-232 half-duplex serial connection.

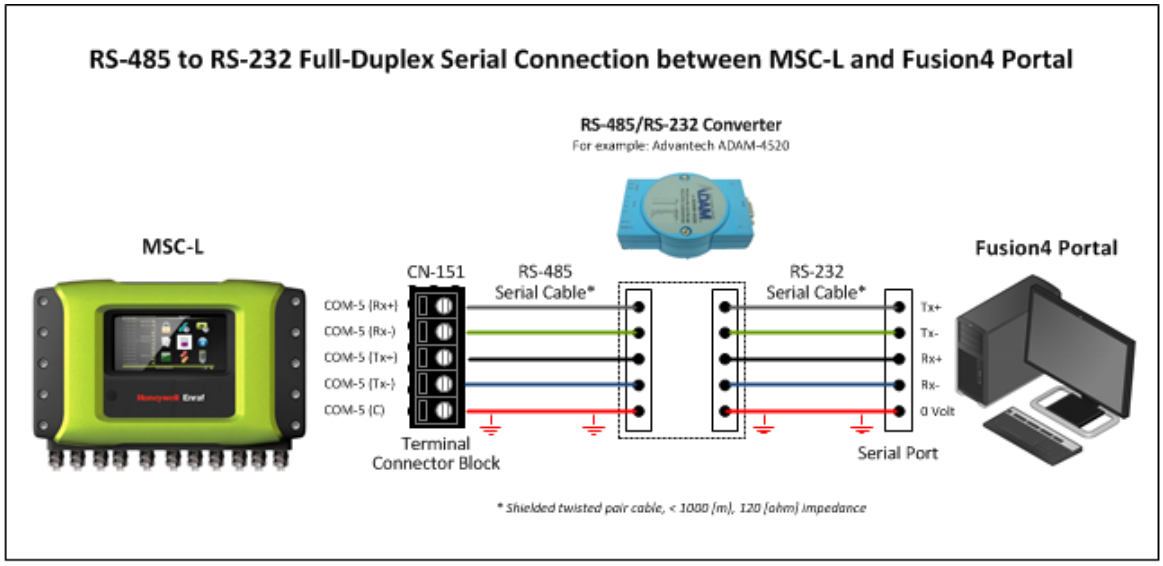
Table 14-4: Layout of Terminal Connector Block CN-150

Connector		Signal Name	Signal Description
ID	Pin		
CN-150	COM-3 (+)	RS485_A	2W RS-485 Tx+/Rx+
	COM-3 (-)	RS485_B	2W RS-485 Tx-/Rx-
	COM-3 (C)	RS485_0V	0 Volt
	COM-4 (+)	RS485_A	2W RS-485 Tx+/Rx+
	COM-4 (-)	RS485_B	2W RS-485 Tx-/Rx-
	COM-4 (C)	RS485_0V	0 Volt

14.3.1.4 RS-485 to RS-232 Full-Duplex Serial Connection

The following figure schematically shows an RS-485 to RS-232 full-duplex serial connection between an MSC-L and a PC with Fusion4 Portal, in which an RS-232 to RS-485 converter is used.

Figure 14-7: RS-485 to RS-232 full-duplex serial connection between MSC-L and Fusion4 Portal



The following table describes the terminal layout of connector CN-151 in an RS-485 to RS-232 full-duplex serial connection.

Table 14-5: Layout of Terminal Connector CN-151

Connector		Signal Name	Signal Description
ID	Pin		
CN-151	COM-5 (Rx+)	RS485_A	4W RS-485 Rx+
	COM-5 (Rx-)	RS485_B	4W RS-485 Rx-
	COM-5 (Tx+)	RS485_Y	4W RS-485 Tx+
	COM-5 (Tx-)	RS485_Z	4W RS-485 Tx-
	COM-5 (C)	RS485_0V	0 Volt

NOTE: Terminal connector block CN-151 must be configured for RS-485 full-duplex communication using the RS COMM mode switch SW2 on the CAN-HMI-MSC board.

14.3.2 Connecting MSC-L to Fusion4 Portal through Ethernet Connection

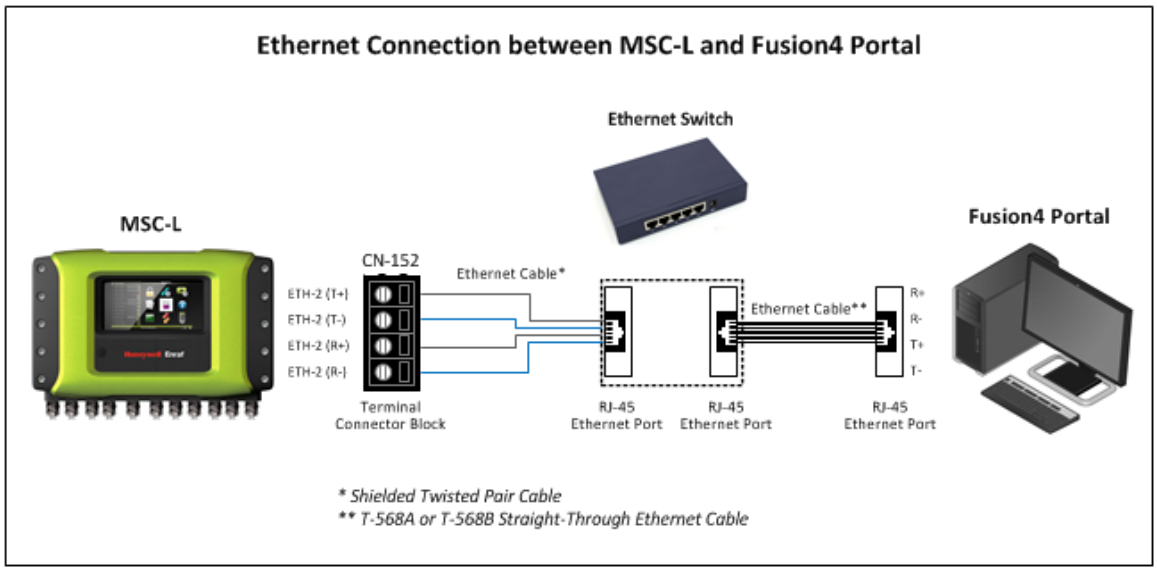
An MSC-L can be connected to a PC running Fusion4 Portal through an Ethernet connection. In doing so, keep the following in mind:

- Preferably use terminal connector block CN-152 on the CAN-HMI-MSC board of the MSC-L in order to guarantee optimum performance.
- For communications between the MSC-L and the PC running Fusion4 Portal the FlexConn protocol is used.
- It is not recommended to connect an MSC-L directly to the PC running Fusion4 Portal. Preferably use a switch between the MSC-L and the PC. Furthermore, the use of a switch enables you to connect multiple MSC-L's.
- Maximum 50 devices can be connected in order to guarantee optimum performance. The maximum number of transactions is 2000 per day.

14.3.2.1 Ethernet Connection with Ethernet Switch

The following figure schematically shows an Ethernet connection between an MSC-L and a PC running Fusion4 Portal, in which an Ethernet switch is used.

Figure 14-8: Ethernet connection between MSC-L and Fusion4 Portal with Ethernet switch



The following table describes the terminal layout of connector CN-152.

Table 14-6: Layout of Terminal Connector CN-152

Connector		Signal Name	Signal Description
ID	Pin		
CN-152	ETH-2 (R+)	R+	Receive +
	ETH-2 (R-)	R-	Receive -
	ETH-2 (T+)	T+	Transmit +
	ETH-2 (T-)	T-	Transmit -

14.4 Multi-Stream Controller for Additive Injection

A Multi-Stream Controller for Additive Injection (MSC-A) can be connected to a PC running Fusion4 Portal in a number of ways, depending on the connectivity options of the PC. The following types of connection can be distinguished:

- Serial connections, see section Section 14.4.1: Connecting MSC-A to Fusion4 Portal through Serial Connection.
- Ethernet connections, see section Section 14.4.2: Connecting MSC-A to Fusion4 Portal through Ethernet Connection.

14.4.1 Connecting MSC-A to Fusion4 Portal through Serial Connection

There are a number of ways to connect an MSC-A to a PC running Fusion4 Portal through a serial connection. The possible connections are:

- RS-485 half-duplex serial connection between the MSC-A and the PC running Fusion4 Portal, see section Section 14.4.1.1: RS-485 Half-Duplex Serial Connection.
- RS-485 full-duplex serial connection between the MSC-A and the PC running Fusion4 Portal, see section Section 14.4.1.2: RS-485 Full-Duplex Serial Connection.

- RS-485 to RS-232 half-duplex serial connection between the MSC-A and the PC running Fusion4 Portal using an RS-232 to RS-485 converter, see section Section 14.4.1.3: RS-485 to RS-232 Half-Duplex Serial Connection.
- RS-485 to RS-232 full-duplex serial connection between the MSC-A and the PC running Fusion4 Portal using an RS-232 to RS-485 converter, see section Section 14.4.1.4: RS-485 to RS-232 Full-Duplex Serial Connection.

When connecting an MSC-A to a PC running Fusion4 Portal keep the following in mind:

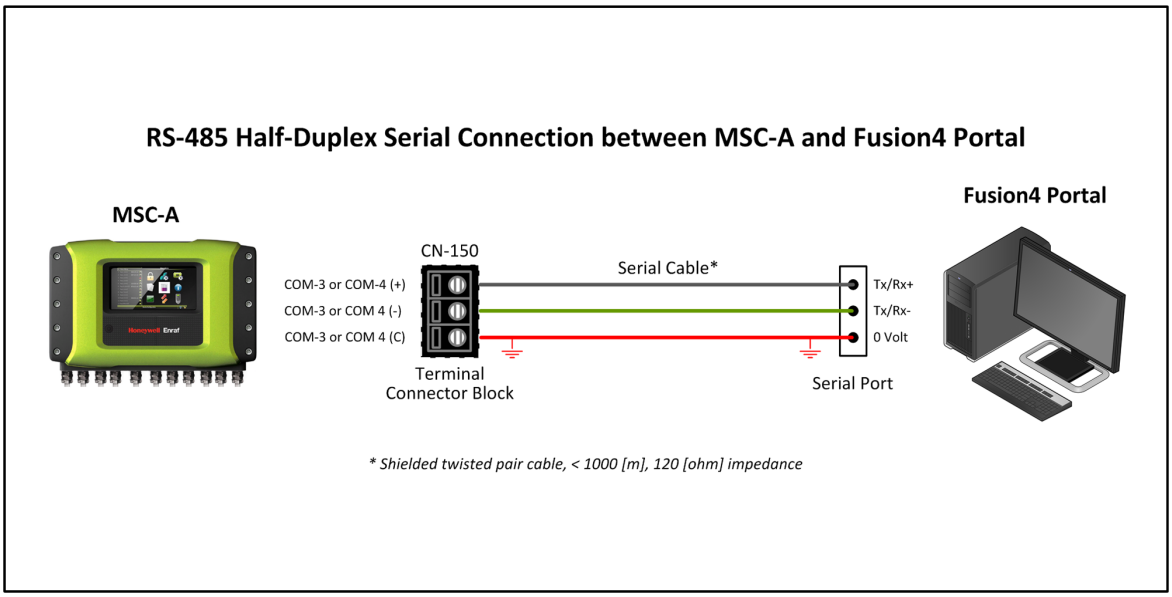
- For an RS-485 half-duplex connection preferably use terminal connector block CN-150 or terminal connector block CN-151 on the CAN-HMI-MSC board of the MSC-A in order to guarantee optimum performance. If terminal connector block CN-151 is used, it must be configured for RS-485 half-duplex communication using the RS COMM mode switch SW2 on the CAN-HMI-MSC board.
- For an RS-485 full-duplex connection preferably use terminal connector block CN-151 on the CAN-HMI-MSC board of the MSC-A in order to guarantee optimum performance. Furthermore, terminal connecter CN-151 must be configured for RS-485 full-duplex communication using the RS COMM mode switch SW2 on the CAN-HMI-MSC board.
- For communications between the MSC-A and the PC FlexConn protocol is used.
- When a multidrop bus connection is used maximum 5 devices or 25 streams, whichever limit is reached first, can be connected in order to guarantee optimum performance.
- A site can have maximum 10 serial multidrop bus connections, i.e. maximum 50 devices or 250 streams, whichever limit is reached first.
- If the connection to the MSC-A represents the last link in a multidrop bus connection, then the bus must be terminated by setting jumpers JP7 and JP8 on the CAN-HMI-MSC board to the TERM (terminated) position. The serial bus will be terminated with a 120 Ohms resistor.

14.4.1.1 RS-485 Half-Duplex Serial Connection

The following figure schematically shows an RS-485 half-duplex serial connection between an MSC-A and a PC with Fusion4 Portal, in which terminal connector block

CN-150 is used.

Figure 14-9: RS-485 half-duplex serial connection between MSC-A and Fusion4 Portal (CN-150)



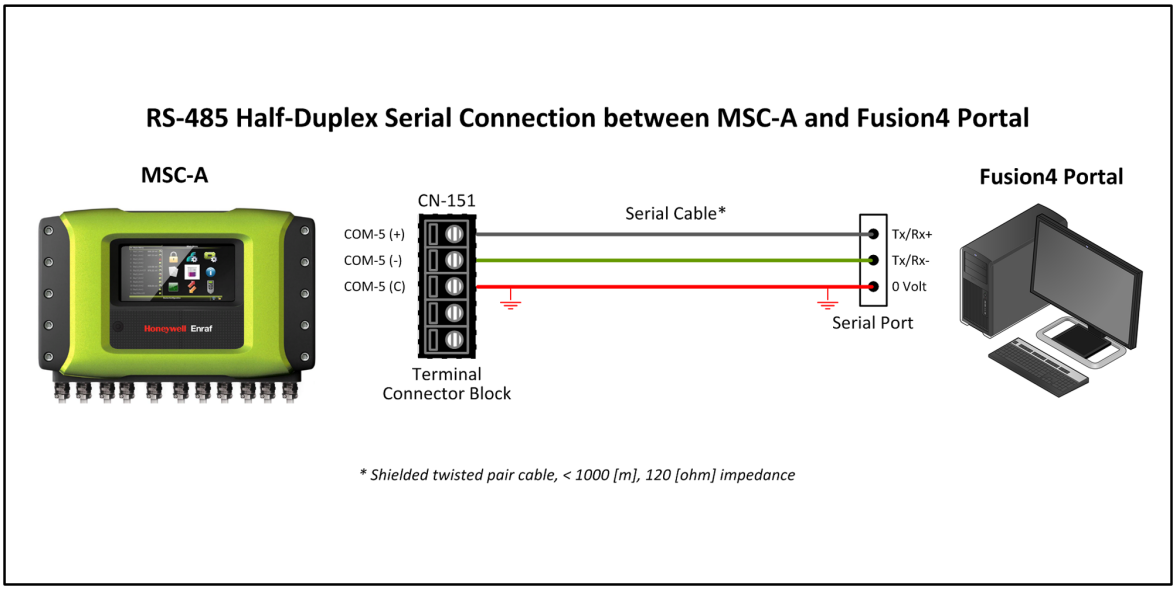
The following table describes the layout of terminal connector block CN-150 in a RS-485 half-duplex serial connection.

Table 14-7: Layout of Terminal Connector Block CN-150

Connector		Signal Name	Signal Description
ID	Pin		
CN-150	COM-3 (+)	RS485_A	2W RS-485 Tx+/Rx+
	COM-3 (-)	RS485_B	2W RS-485 Tx-/Rx-
	COM-3 (C)	RS485_0V	0 Volt
	COM-4 (+)	RS485_A	2W RS-485 Tx+/Rx+
	COM-4 (-)	RS485_B	2W RS-485 Tx-/Rx-
	COM-4 (C)	RS485_0V	0 Volt

The following figure schematically shows an RS-485 half-duplex serial connection between an MSC-A and a PC with Fusion4 Portal, in which terminal connector block CN-151 used.

Figure 14-10: RS-485 half-duplex serial connection between MSC-A and Fusion4 Portal (CN-151)



The following table describes the terminal layout of connector CN-151 in a RS-485 half-duplex serial connection.

Table 14-8: Layout of Terminal Connector CN-151

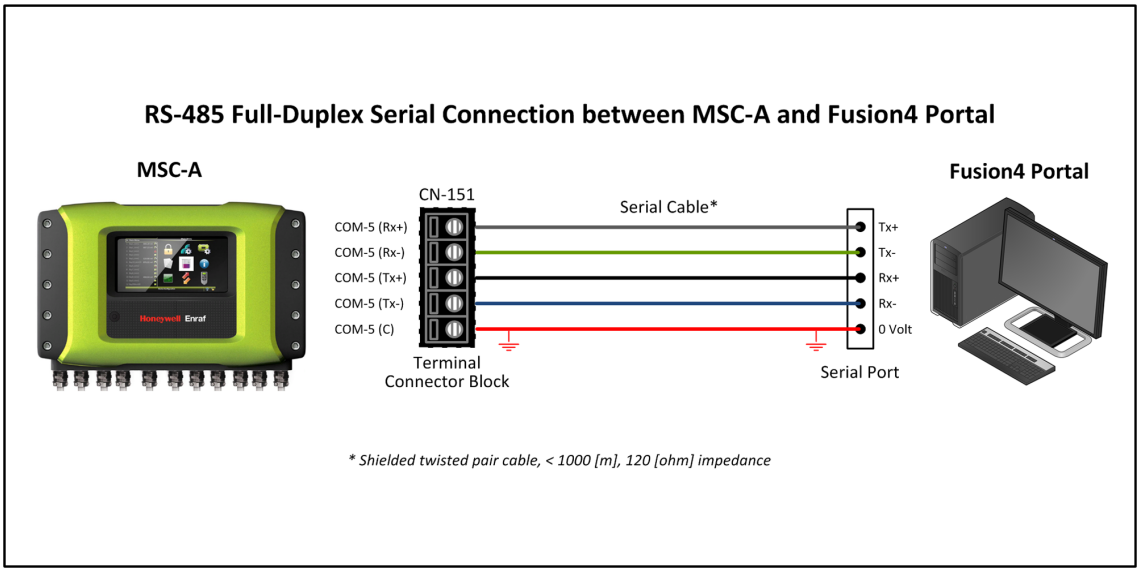
Connector		Signal Name	Signal Description
ID	Pin		
CN-151	COM-5 (+)	RS485_A	2W RS-485 Tx+/Rx+
	COM-5 (-)	RS485_B	2W RS-485 Tx-/Rx-
	COM-5 (C)	RS485_0V	0 Volt
	N/A	N/A	N/A
	N/A	N/A	N/A

NOTE: Terminal connector block CN-151 must be configured for RS-485 half-duplex communication using the RS COMM mode switch SW2 on the CAN-HMI-MSC board.

14.4.1.2 RS-485 Full-Duplex Serial Connection

The following figure schematically shows an RS-485 full-duplex serial connection between an MSC-A and a PC with Fusion4 Portal.

Figure 14-11: RS-485 full-duplex serial connection between MSC-A and Fusion4 Portal



The following table describes the terminal layout of connector CN-151 in an RS-485 full-duplex connection.

Table 14-9: Layout of Terminal Connector CN-151

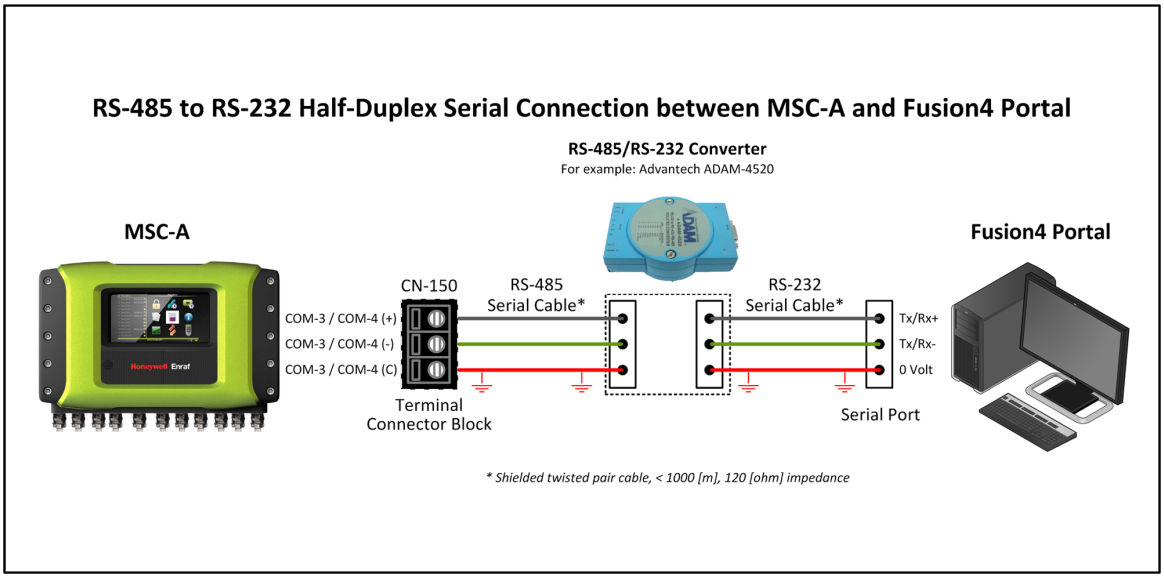
Connector		Signal Name	Signal Description
ID	Pin		
CN-151	COM-5 (Rx+)	RS485_A	4W RS-485 Rx+
	COM-5 (Rx-)	RS485_B	4W RS-485 Rx-
	COM-5 (Tx+)	RS485_Y	4W RS-485 Tx+
	COM-5 (Tx-)	RS485_Z	4W RS-485 Tx-
	COM-5 (C)	RS485_0V	0 Volt

NOTE: Terminal connector block CN-151 must be configured for RS-485 full-duplex communication using the RS COMM mode switch SW2 on the CAN-HMI-MSC board.

14.4.1.3 RS-485 to RS-232 Half-Duplex Serial Connection

The following figure schematically shows an RS-485 to RS-232 half-duplex serial connection between an MSC-A and a PC with Fusion4 Portal, in which an RS-232 to RS-485 converter is used.

Figure 14-12: RS-485 to RS-232 half-duplex serial connection between MSC-A and Fusion4 Portal



The following table describes the layout of terminal connector block CN-150 in an RS-485 to RS-232 half-duplex serial connection.

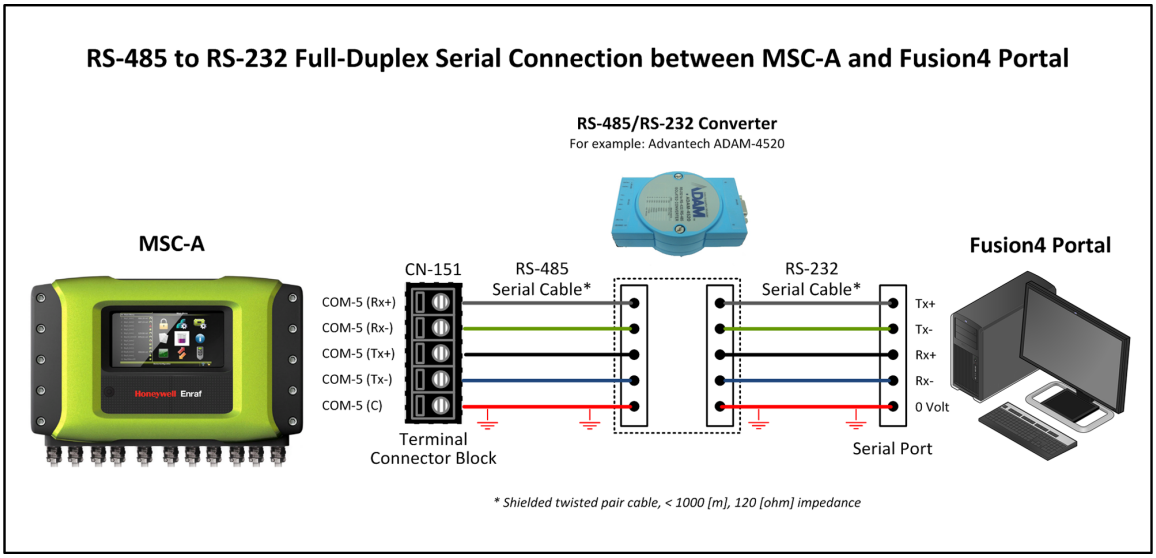
Table 14-10: Layout of Terminal Connector Block CN-150

Connector		Signal Name	Signal Description
ID	Pin		
CN-150	COM-3 (+)	RS485_A	2W RS-485 Tx+/Rx+
	COM-3 (-)	RS485_B	2W RS-485 Tx-/Rx-
	COM-3 (C)	RS485_0V	0 Volt
	COM-4 (+)	RS485_A	2W RS-485 Tx+/Rx+
	COM-4 (-)	RS485_B	2W RS-485 Tx-/Rx-
	COM-4 (C)	RS485_0V	0 Volt

14.4.1.4 RS-485 to RS-232 Full-Duplex Serial Connection

The following figure schematically shows an RS-485 to RS-232 full-duplex serial connection between an MSC-A and a PC with Fusion4 Portal, in which an RS-232 to RS-485 converter is used.

Figure 14-13: RS-485 to RS-232 full-duplex serial connection between MSC-A and Fusion4 Portal



The following table describes the terminal layout of connector CN-151 in an RS-485 to RS-232 full-duplex serial connection.

Table 14-11: Layout of Terminal Connector CN-151

Connector		Signal Name	Signal Description
ID	Pin		
CN-151	COM-5 (Rx+)	RS485_A	4W RS-485 Rx+
	COM-5 (Rx-)	RS485_B	4W RS-485 Rx-
	COM-5 (Tx+)	RS485_Y	4W RS-485 Tx+
	COM-5 (Tx-)	RS485_Z	4W RS-485 Tx-
	COM-5 (C)	RS485_0V	0 Volt

NOTE: Terminal connector block CN-151 must be configured for RS-485 full-duplex communication using the RS COMM mode switch SW2 on the CAN-HMI-MSC board.

14.4.2 Connecting MSC-A to Fusion4 Portal through Ethernet Connection

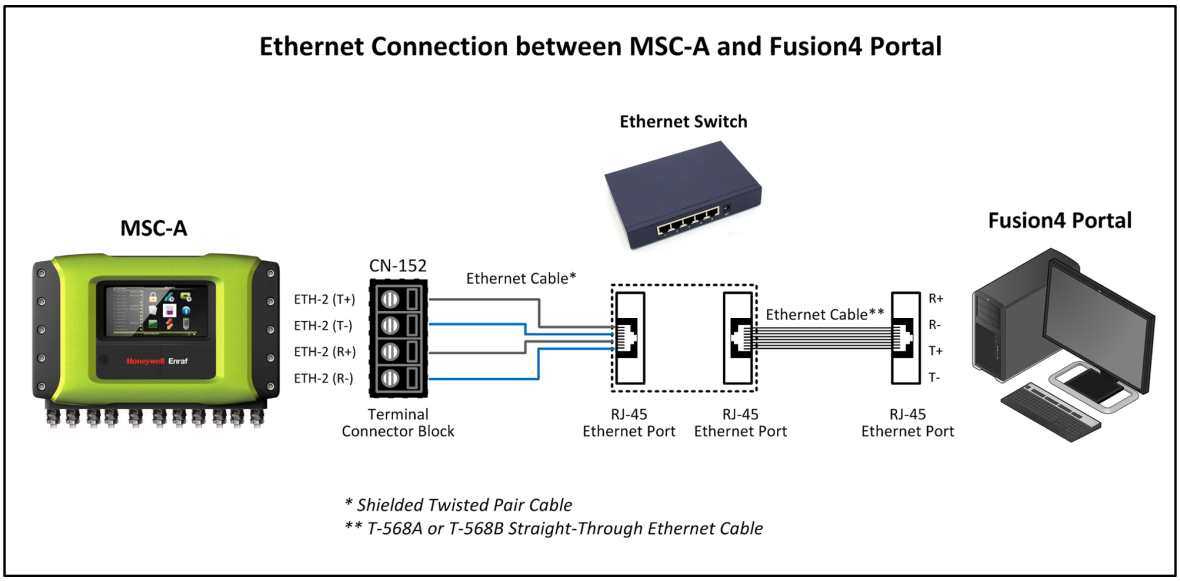
An MSC-A can be connected to a PC running Fusion4 Portal through an Ethernet connection. In doing so, keep the following in mind:

- Preferably use terminal connector block CN-152 on the CAN-HMI-MSC board of the MSC-A in order to guarantee optimum performance.
- For communications between the MSC-A and the PC running Fusion4 Portal the FlexConn protocol is used.
- It is not recommended to connect an MSC-A directly to the PC running Fusion4 Portal. Preferably use a switch between the MSC-A and the PC. Furthermore, the use of a switch enables you to connect multiple MSC-A's.
- Maximum 50 devices can be connected in order to guarantee optimum performance. The maximum number of transactions is 2000 per day.

14.4.2.1 Ethernet Connection with Ethernet Switch

The following figure schematically shows an Ethernet connection between an MSC-A and a PC running Fusion4 Portal, in which an Ethernet switch is used.

Figure 14-14: Ethernet connection between MSC-A and Fusion4 Portal with Ethernet switch



The following table describes the terminal layout of connector CN-152.

Table 14-12: Layout of Terminal Connector CN-152

Connector		Signal Name	Signal Description
ID	Pin		
CN-152	ETH-2 (R+)	R+	Receive +
	ETH-2 (R-)	R-	Receive -
	ETH-2 (T+)	T+	Transmit +
	ETH-2 (T-)	T-	Transmit -

14.5 Single Stream Controller for Blending

The Single Stream Controller for Blending (SSC-B) can be connected to a PC running Fusion4 Portal in a number of ways, depending on the connectivity options of the PC. The possible connections are:

- RS-485 half-duplex serial connection between the SSC-B and the PC running Fusion4 Portal, see section Section 14.5.1: RS-485 half-duplex serial connection.
- RS-485 to RS-232 half-duplex serial connection between the SSC-B and the PC running Fusion4 Portal using an RS-232 to RS-485 converter, see section Section 14.5.2: RS-485 to RS-232 Half-Duplex Serial Connection.
- RS-485 half-duplex serial connection between the SSC-B and the PC running Fusion4 Portal using a terminal server, see section Section 14.5.3: RS-485 Half-Duplex Serial Connection with Terminal Server.

When connecting an SSC-B to a PC running Fusion4 Portal keep the following in mind:

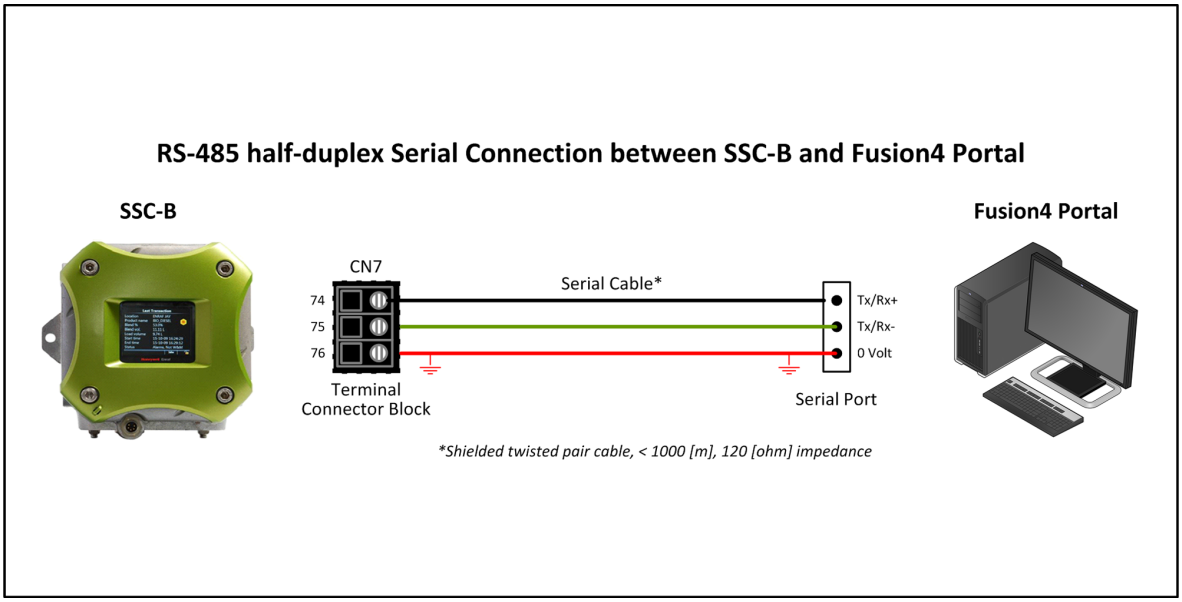
- Preferably use terminal connector block CN7 on the CAN-OPTION-SSC board of the SSC-B in order to guarantee optimum performance.
- For communications between the SSC-B and the PC FlexConn protocol is used.
- When a multidrop bus connection is used maximum 5 devices or 25 streams, whichever limit is reached first, can be connected in order to guarantee optimum performance.

- A site can have maximum 10 multidrop bus connections, i.e. maximum 50 devices or 250 streams, whichever limit is reached first.
- If the connection to the SSC-B represents the last link in a multidrop bus connection, then the bus must be terminated by setting jumper JP8 on the CAN-OPTION-SSC board of the SSC-B to the TERM (terminated) position. The serial bus will be terminated with a 120 Ohms resistor.

14.5.1 RS-485 half-duplex serial connection

The following figure schematically shows an RS-485 half-duplex serial connection between an SSC-B and a PC with Fusion4 Portal.

Figure 14-15: RS-485 half-duplex serial connection between SSC-B and Fusion4 Portal



The following table describes the layout of terminal connector block CN7 in an RS-485 half-duplex serial connection.

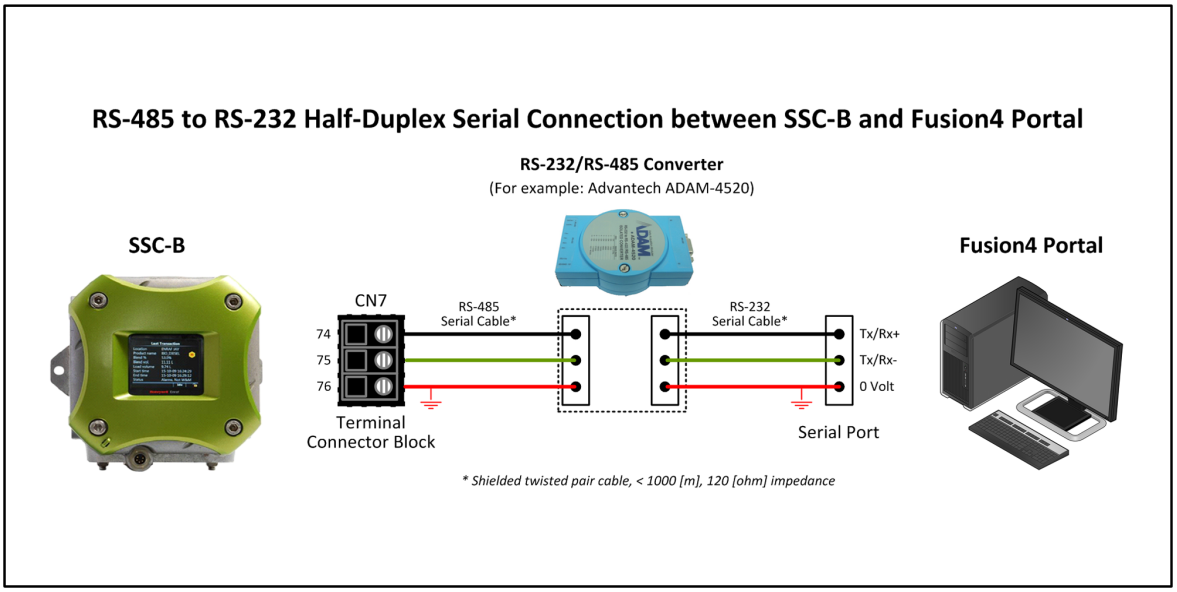
Table 14-13: Layout of Terminal Connector Block CN7

Connector		Signal Name	Signal Description
ID	Pin		
CN7	74	RS485_A	2W RS-485 Tx+/Rx+
	75	RS485_B	2W RS-485 Tx-/Rx-
	76	RS485_0V	0 Volt

14.5.2 RS-485 to RS-232 Half-Duplex Serial Connection

The following figure schematically shows an RS-485 to RS-232 half-duplex serial connection between an SSC-B and a PC with Fusion4 Portal, in which an RS-232 to RS-485 converter is used.

Figure 14-16: RS-485 to RS-232 half-duplex serial connection between SSC-B and Fusion4 Portal



The following table describes the layout of terminal connector block CN7 in an RS-485 to RS-232 half-duplex serial connection.

Table 14-14: Layout of Terminal Connector Block CN7

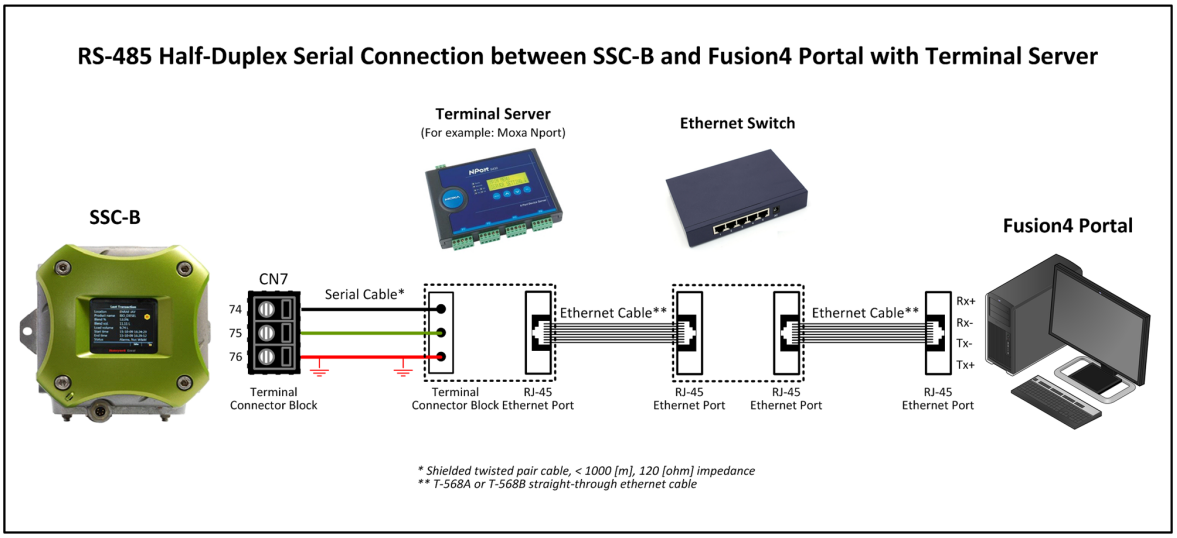
Connector		Signal Name	Signal Description
ID	Pin		
CN7	74	RS485_A	2W RS-485 Tx+/Rx+
	75	RS485_B	2W RS-485 Tx-/Rx-
	76	RS485_0V	0 Volt

14.5.3 RS-485 Half-Duplex Serial Connection with Terminal Server

A terminal server is used to create a multidrop bus connection between multiple devices and a PC running Fusion4 Portal. The following figure schematically shows

an RS-485 connection between an SSC-B and a PC running Fusion4 Portal, in which a terminal server is used.

Figure 14-17: RS-485 connection between SSC-B and Fusion4 Portal with terminal server



The following table describes the layout of terminal connector block CN7 in an RS-485 half-duplex serial connection, in which a terminal server is used.

Table 14-15: Layout of Terminal Connector Block CN7

Connector		Signal Name	Signal Description
ID	Pin		
CN7	74	RS485_A	2W RS-485 Tx+/Rx+
	75	RS485_B	2W RS-485 Tx-/Rx-
	76	RS485_0V	0 Volt

14.6 Single Stream Controller for Additive Injection

The Single Stream Controller for Additive Injection (SSC-A) can be connected to a PC running Fusion4 Portal in a number of ways, depending on the connectivity options of the PC. The possible connections are:

- RS-485 half-duplex serial connection between the SSC-A and the PC running Fusion4 Portal, see section Section 14.6.1: RS-485 half-duplex serial connection.
- RS-485 to RS-232 half-duplex serial connection between the SSC-A and the PC running Fusion4 Portal using an RS-232 to RS-485 converter, see section Section 14.6.2: RS-485 to RS-232 Half-Duplex Serial Connection.
- RS-485 half-duplex serial connection between the SSC-A and the PC running Fusion4 Portal using a terminal server, see section Section 14.6.3: RS-485 Half-Duplex Serial Connection with Terminal Server.

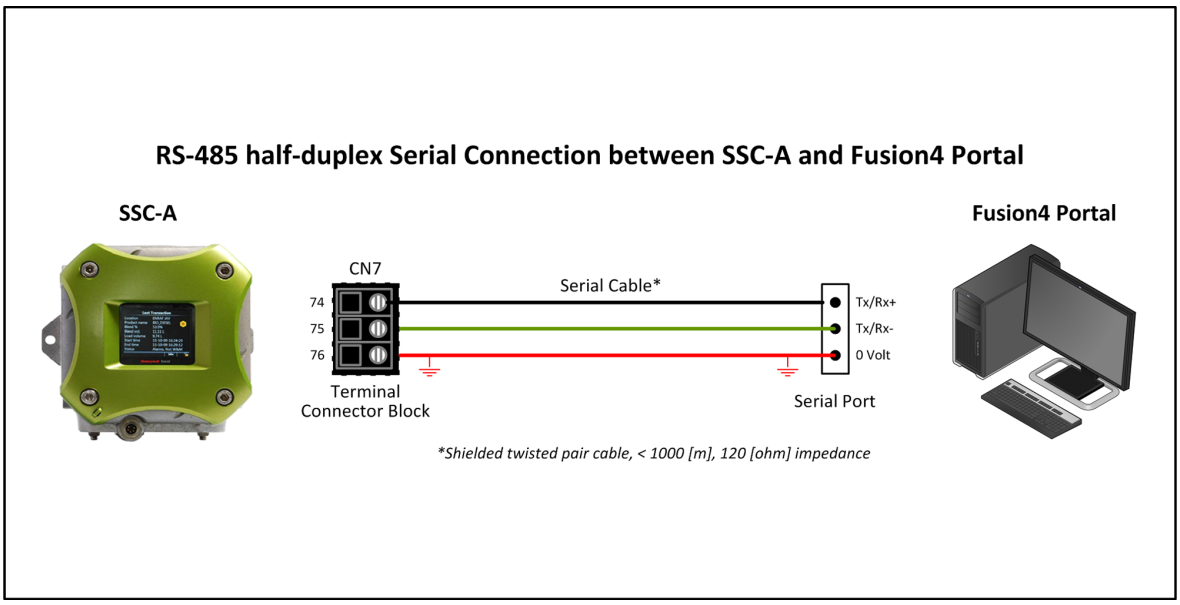
When connecting an SSC-A to a PC running Fusion4 Portal keep the following in mind:

- Preferably use terminal connector block CN7 on the CAN-OPTION-SSC board of the SSC-A in order to guarantee optimum performance.
- For communications between the SSC-A and the PC FlexConn protocol is used.
- When a multidrop bus connection is used maximum 5 devices or 25 streams, whichever limit is reached first, can be connected in order to guarantee optimum performance.
- A site can have maximum 10 multidrop bus connections, i.e. maximum 50 devices or 250 streams, whichever limit is reached first.
- If the connection to the SSC-A represents the last link in a multidrop bus connection, then the bus must be terminated by setting jumper JP8 on the CAN-OPTION-SSC board of the SSC-A to the TERM (terminated) position. The serial bus will be terminated with a 120 Ohms resistor.

14.6.1 RS-485 half-duplex serial connection

The following figure schematically shows an RS-485 half-duplex serial connection between an SSC-A and a PC with Fusion4 Portal.

Figure 14-18: RS-485 half-duplex serial connection between SSC-A and Fusion4 Portal



The following table describes the layout of terminal connector block CN7 in an RS-485 half-duplex serial connection.

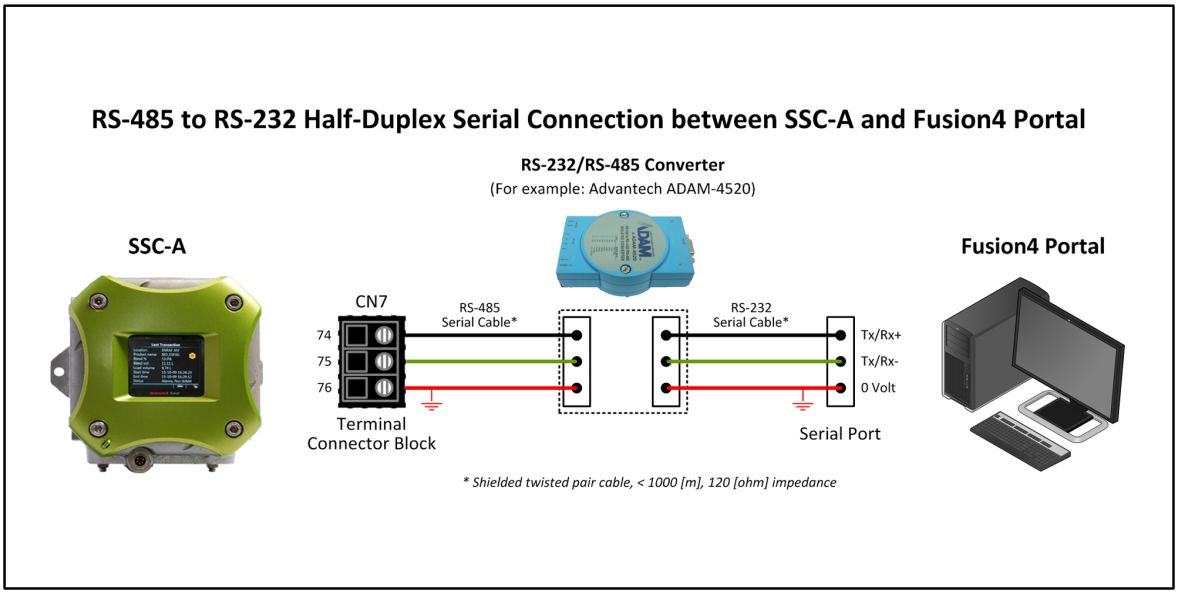
Table 14-16: Layout of Terminal Connector Block CN7

Connector		Signal Name	Signal Description
ID	Pin		
CN7	74	RS485_A	2W RS-485 Tx+/Rx+
	75	RS485_B	2W RS-485 Tx-/Rx-
	76	RS485_0V	0 Volt

14.6.2 RS-485 to RS-232 Half-Duplex Serial Connection

The following figure schematically shows an RS-485 to RS-232 half-duplex serial connection between an SSC-A and a PC with Fusion4 Portal, in which an RS-232 to RS-485 converter is used.

Figure 14-19: RS-485 to RS-232 half-duplex serial connection between SSC-A and Fusion4 Portal



The following table describes the layout of terminal connector block CN7 in an RS-485 to RS-232 half-duplex serial connection.

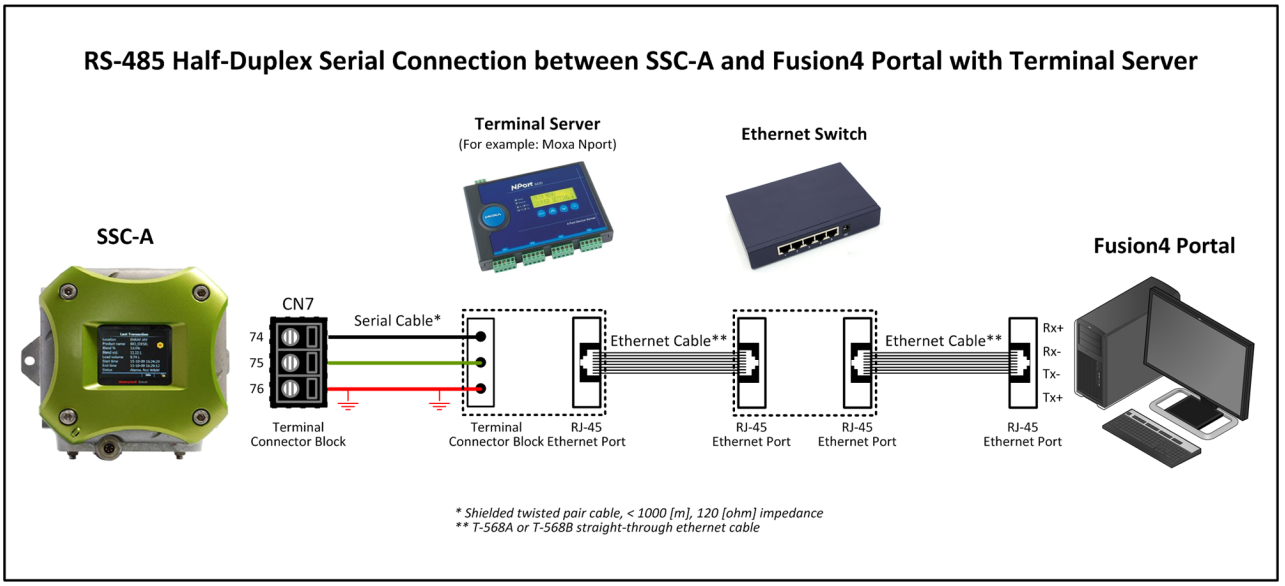
Table 14-17: Layout of Terminal Connector Block CN7

Connector		Signal Name	Signal Description
ID	Pin		
CN7	74	RS485_A	2W RS-485 Tx+/Rx+
	75	RS485_B	2W RS-485 Tx-/Rx-
	76	RS485_0V	0 Volt

14.6.3 RS-485 Half-Duplex Serial Connection with Terminal Server

A terminal server is used to create a multidrop bus connection between multiple devices and a PC running Fusion4 Portal. The following figure schematically shows an RS-485 connection between an SSC-A and a PC running Fusion4 Portal, in which a terminal server is used.

Figure 14-20: RS-485 connection between SSC-A and Fusion4 Portal with terminal server



The following table describes the layout of terminal connector block CN7 in an RS-485 half-duplex serial connection, in which a terminal server is used.

Table 14-18: Layout of Terminal Connector Block CN7

Connector		Signal Name	Signal Description
ID	Pin		
CN7	74	RS485_A	2W RS-485 Tx+/Rx+
	75	RS485_B	2W RS-485 Tx-/Rx-
	76	RS485_0V	0 Volt

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