



MasterLink Software Application User's Guide

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Honeywell Process Solutions

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CONTENTS

1 About MasterLink Software Application	1
1.1 Scope	2
1.2 Features	3
1.3 Security Considerations	5
1.4 Technical Assistance	6
2 Installation	7
2.1 Interoperability with SuiteSQL	8
2.2 Before you install	9
2.3 MasterLink Software Application Installation with SQL Server	12
2.3.1 Installing MasterLink Software Application with remote SQL Server	17
2.4 Installing MasterLink Software Application with SQLite	23
3.1 Post Installation Steps	27
3.2 Software/Hardware Compatibility	28
4 MasterLink Software Application User Interface	29
4.1 Getting Started	30
4.1.1 User Creation and Activation Process	31
4.1.1.1 Site Administrator Creation	31
4.1.1.2 Creating Users	31
4.1.1.3 User Registration	31
4.1.1.4 Forgot Password	34
4.2 Sites	35
4.2.1 Direct Connect	36
4.2.2 Add Site	37
4.2.3 Connecting to a Site	40
4.3 Dashboard	43
4.3.1 User Interface	44
4.3.2 Instrument Data	46
4.3.3 Alarms	47
4.3.4 Configuration Check	49
4.3.5 Time Sync	50
4.3.6 Firmware Update	51
4.3.7 Audit Trail	53
4.3.8 Battery	54
4.3.9 Update User Account	56
4.3.10 Change Password	57
4.4 View and Edit	58
4.4.1 Configure by Group	59
4.4.2 Configure by Item	60
4.4.3 Send Item File	62
4.4.4 Logging Configuration	63
4.4.5 Manage User Table	66
4.4.6 Manage Shortlist	69

CONTENTS

4.5 Calibrate	70
4.5.1 Pressure Calibration P1	71
4.5.2 Pressure Calibration P2	76
4.5.3 Temperature Calibration	77
4.6 Read Data	83
4.6.1 Item File	84
4.6.2 Audit Trail	87
4.6.2.1 Audit Trail Graphs	90
4.6.3 Alarm Logs	94
4.6.3.1 For Selected sites	94
4.6.3.2 For Connected site	96
4.6.4 Event Logs	97
4.6.5 Diagnostic Logs	99
4.6.6 Cellular Logs	101
4.6.7 Shortlist	103
4.6.8 Activity Log	105
4.7 Live Data	107
4.8 Administer	112
4.8.1 Activity Log - Purge	112
4.8.2 Export Instrument Data	114
4.8.3 Import Instrument Data	116
4.8.4 Item Template Configuration	118
4.9 Settings	120
4.9.1 Communications Setup	121
4.9.2 Time-Sync Properties	124
4.9.3 Auto Download Settings	125
4.10 Security and User Management	126
4.10.1 User Roles	127
4.10.2 User Configuration	130
4.10.2.1 Passkey Generation	131
5 Update	133
5.1 EVC Firmware Update	134
5.2 Modem Firmware Update	135
5.3 Upload Certificate	136
6 Troubleshooting scenarios	138
7 Glossary	141

CHAPTER 1

1 About MasterLink Software Application

MasterLink R500.1 Software Application is a configuration and diagnostic software designed for Electronic Volume Corrector EC 350 and Cloud Link 4G Modem. The primary purpose is to configure, calibrate and download data from EC 350 and MasterLink Software Application R500.1. MasterLink R500.1 Software Application is supported on Windows environment and is also available to download from Apple iStore and Google play store.

1.1 Scope

This version of MasterLink Software Application has support for both Cloud Link 4G Modem and EC 350 Gas Volume Corrector devices only. It is recommended to use Suite SQL for Configuration and diagnostics of Mercury metering devices other than EC 350 and Cloud Link 4G Modem.

1.2 Features

Mobile version of MasterLink Software Application can be used to connect to EC 350 over BLE (Low Energy Bluetooth). The mobile app auto discovers a paired/added site (integrated EC 350 or stand alone Cloud Link) when the technician is within the BLE range, thus enabling the technician download predefined set of dashboard data based on auto download settings.

Windows version of Master Software application can be used to connect to EC 350 over Serial, IrDA, Messenger Modem and Cellular interface. MasterLink software enables a technician to download predefined set of dashboard data as soon as the application connects to the instrument based on the auto download settings.

Both EC 350 and Cloud Link 4G Modem can be configured as a single site allowing the user to perform configuration and collect diagnostic information under a single site.

Dashboard data is a quick summary of key parameters of a site. This includes critical instrument data, list of active alarms, power source information, audit trail data, configuration check, time sync and firmware details.

MasterLink Software Application allows users to:

- Define dashboard data (auto) download settings
- Provides a wizard based configuration and calibration approach
- Enable SSL encrypted communication with site Over the Air (OTA)
- Enable BLE security
- Secure critical site data
- Download audit, event and alarm log data
- Generate reports such as:
 - Item report
 - Site report
 - Calibration report
 - Short List report
 - Audit Trail reports
 - Event Log report
 - Alarm Log report
 - Activity Log report
 - Cellular Log report
 - Diagnostic Log report

- Perform Database Administrative tasks such as
 - CSD (Comma Separated Data) Conversion
 - Import/Export instrument data
 - Import/Export site data
- Perform instrument and modem firmware updates
- Capture live data and plot graphs
- Plot graph over Audit Trail data
- Perform role based user administration for MasterLink software application
- Administer access privileges for device level functions by sending user table
- Configure communication settings
- Perform offline log-in configuration and send to instrument when connected

1.3 Security Considerations

- It is recommended to use the Cloud Link 4G modem in integrated mode with EC 350 for better Bluetooth security during pairing
- For data protection, it is recommended to provide full privileges to the *ProgramData\Honeywell\MasterLink Software Application* folder only to appropriate MasterLink Software Application users
- All files transferred to an Android device for use by MasterLink Software Application must be deleted after use to ensure that there is no data loss / leak
- It is recommended to keep the Android phone or iPhone used for MasterLink Software Application updated with the security patches released by the respective platforms
- It is also recommended to enable SSL for secure communication with MasterLink Software Application R500.1

1.4 Technical Assistance

For further technical assistance, email at RMG-TAC-Support@Honeywell.com.

2 Installation

This chapter describes the installation of MasterLink Software Application software.

Related topics:

[Interoperability with SuiteSQL](#)

[Before you install](#)

[Installing MasterLink Software Application with SQL Server](#)

[Installing MasterLink Software Application with remote SQL Server](#)

[Installing MasterLink Software Application with SQLite](#)

2.1 Interoperability with SuiteSQL

MasterLink Software Application R500.1 can coexist with Suite SQL.

New MasterLink Software Application R500.1 can be used with either SQL database Server or SQLite database.

If a single data source is preferred with an existing MasterLink SQL installation, please choose SQL Server as a data-base option during MasterLink R500.1 installation.

2.2 Before you install

Here are the recommended system specifications:

Windows	<p>Windows Server 2008, 2008 R2 [32, 64 bit]</p> <p>Windows Server 2012 [64 bit], 2012 R2 support [64 bit]</p> <p>Windows 7 [32, 64 bit]</p> <p>Windows 8 [32 bit, 64 bit]</p> <p>Windows 8.1 [32 bit, 64 bit]</p> <p>Windows 10</p>
SQL Server	<p>SQL Server 2008 [32, 64 bit]</p> <p>SQL Server 2008R2 [32, 64 bit]</p> <p>SQL Server 2012 [32 bit, 64 bit], 2012 SP2 [32 bit, 64 bit]</p> <p>SQL Server 2014 [32 bit, 64 bit]</p>

Screen Resolution	XGA (1024 x 768) WXGA(1280 x 800) WXGA+ (1440x900) HD (1366 x 768) HD+ (1600 x 900) FHD (1920 x 1080)
RAM	4GB or higher is recommended
Storage	40 GB or higher is recommended
Processor Speed	Dual-core or higher is recommended

Mobile Recommendations

Android

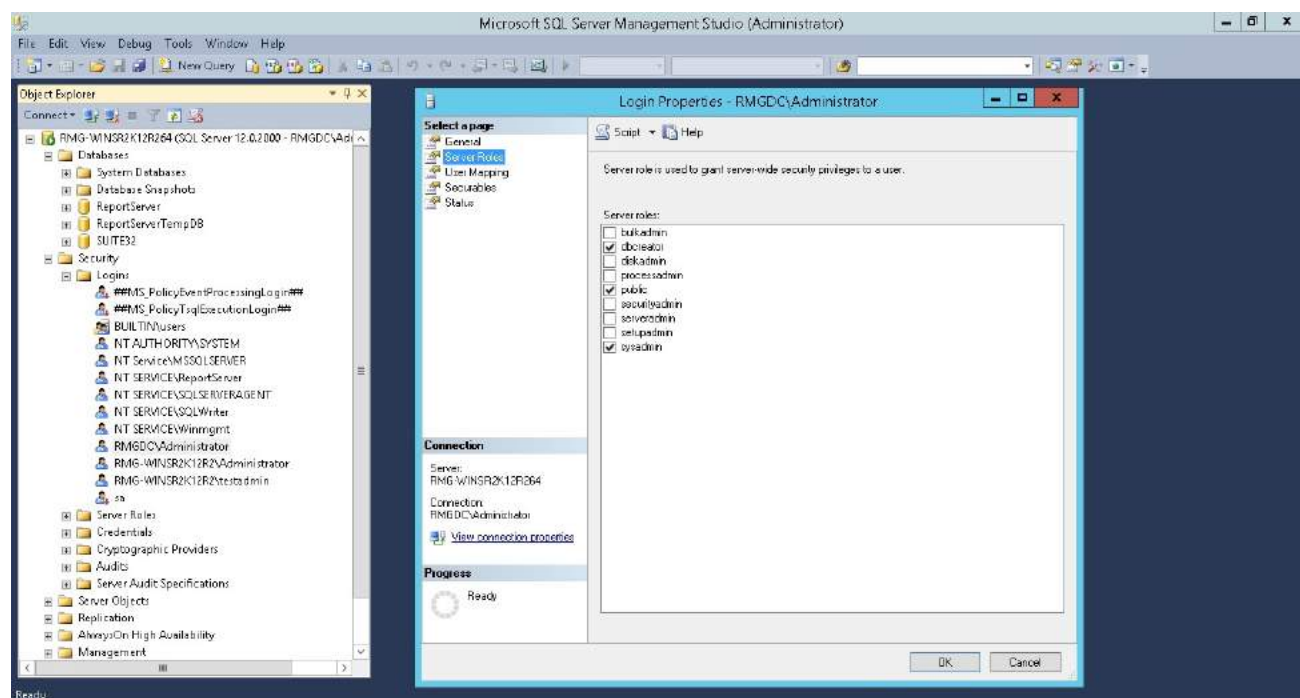
Android OS	4.3x, 4.4.0-4.4.4, 5.0.0-5.0.2, 5.1.x, 6.0
RAM	1 GB onwards
Memory	8 GB onwards
Processor Speed	Dual-core 1 GHz onwards
Communication	BLE capability
General availability of Mail Client	Required

iOS

OS	7.1.x, 8.4.x, 9.1.x, 10.1.x
Memory	8 GB onwards
Screen Size	3.5 inches onwards
RAM	1 GB onwards
Processor Speed	Dual-core 1 GHz onwards
Communication	BLE capability
Android OS	7.1.x Onwards
Both 32 and 64 bit should be supported	Yes
General availability of Mail Client	Required

Other Prerequisites

- SQL Server instance needs to be installed if MasterLink Software Application uses SQL Server as database.
 - SQL Server is not required if MasterLink Software Application uses SQLite as database.
- Users must have DBO access to the Database instance. This is to enable them to use an existing database instance or a network SQL database instance.
- The path for creating database files on a network needs to be created upfront if MasterLink Software Application uses remote database instance, and the path must not exist on the machine where the installer is running.
- For network installation of MasterLink Software Application database, the systems must be in the same domain, and domain administrative credentials are needed to create the database.
 - The domain administrator needs have access to the path where the user intends to create the database files.
 - The domain administrator also needs to have System Admin permissions to create and administer the database.



- If you are using a database instance on your network, you need to have domain user permission.

2.3 MasterLink Software Application Installation with SQL Server

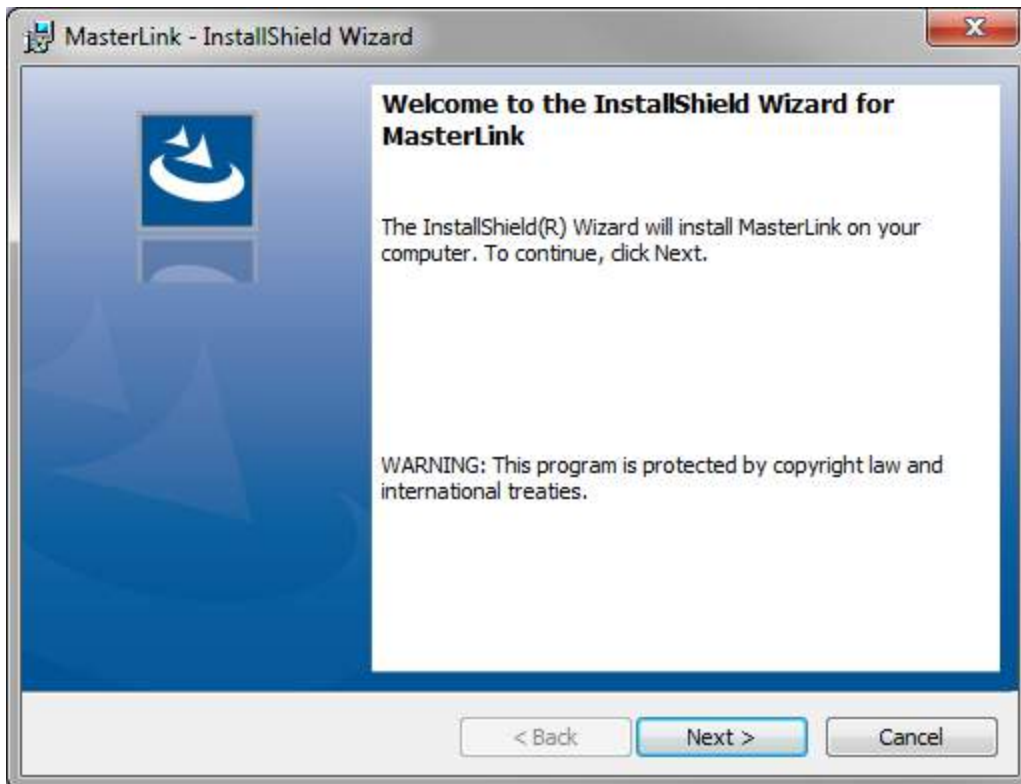
Prerequisites:

If you are using SQL Server, then a SQL Server instance must be installed before installing MasterLink Software Application.

Administrative Privileges are required to install the application.

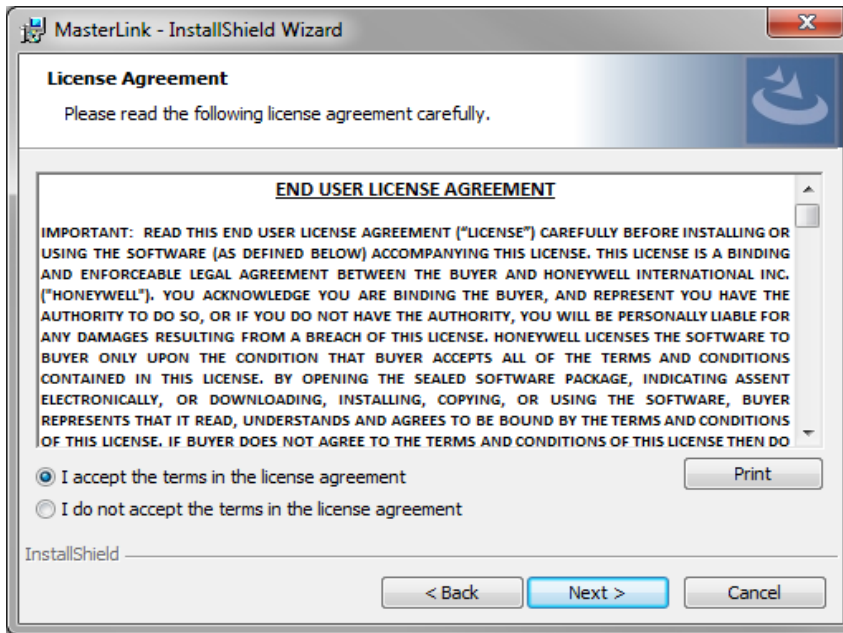
1. Launch the installer.

The *MasterLink Software Application - InstallShield Wizard* appears.



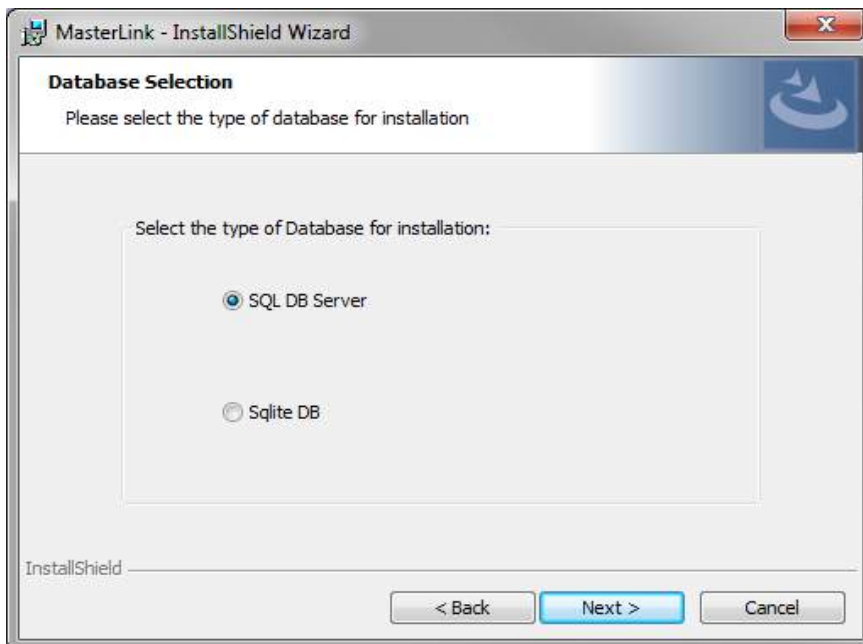
2. Click **Next**.

The *License Agreement* page appears.



3. Click *I accept the terms in the license agreement* and then click **Next**.

The *Database Selection* page appears.

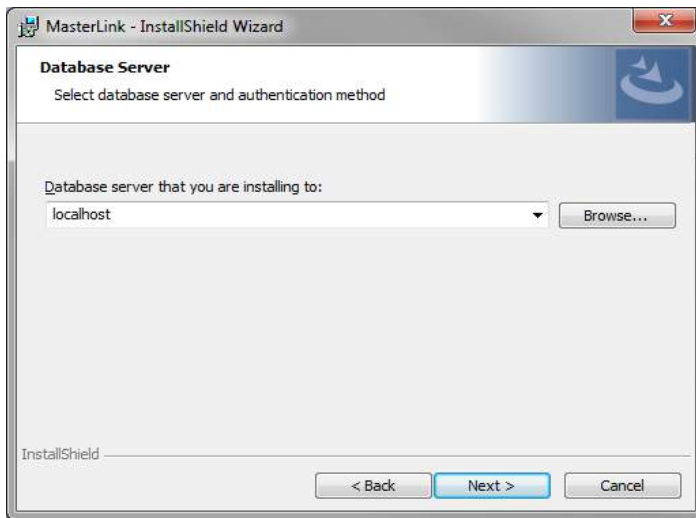


By default, *SQL DB Server* is selected.

If you choose to continue with a *SQL DB Server* for installation, then you will see the following page (as shown in step 4), where you need to select the database server instance.

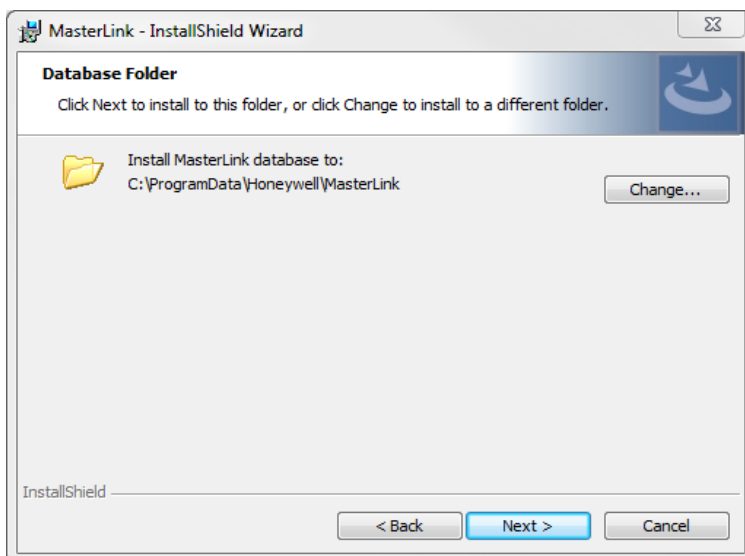
4. Click **Next** to continue.

The *Database Server* page appears.



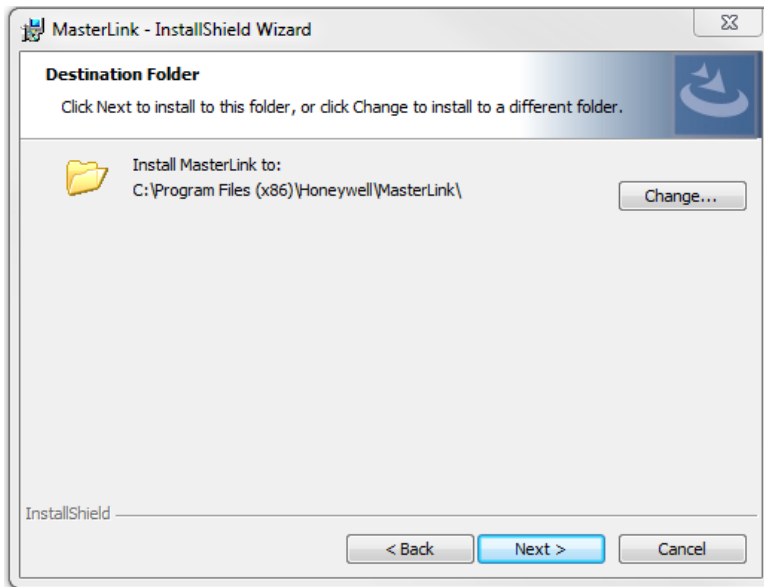
5. Click **Next**.

The *Database Folder* page appears. Browse and select the folder where you need to install MasterLink Software Application and database files.



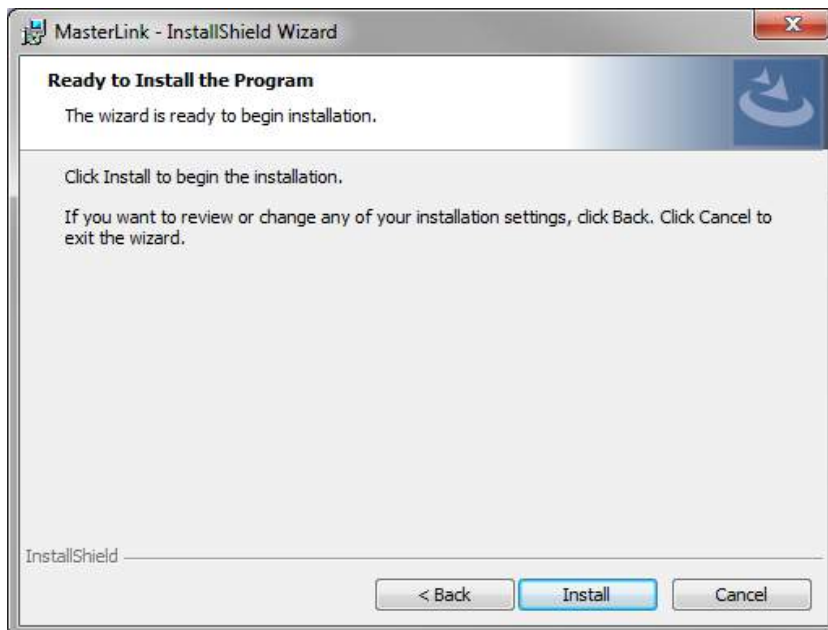
6. Click **Next**.

The *Destination folder* page appears, displaying information about the default destination folder.

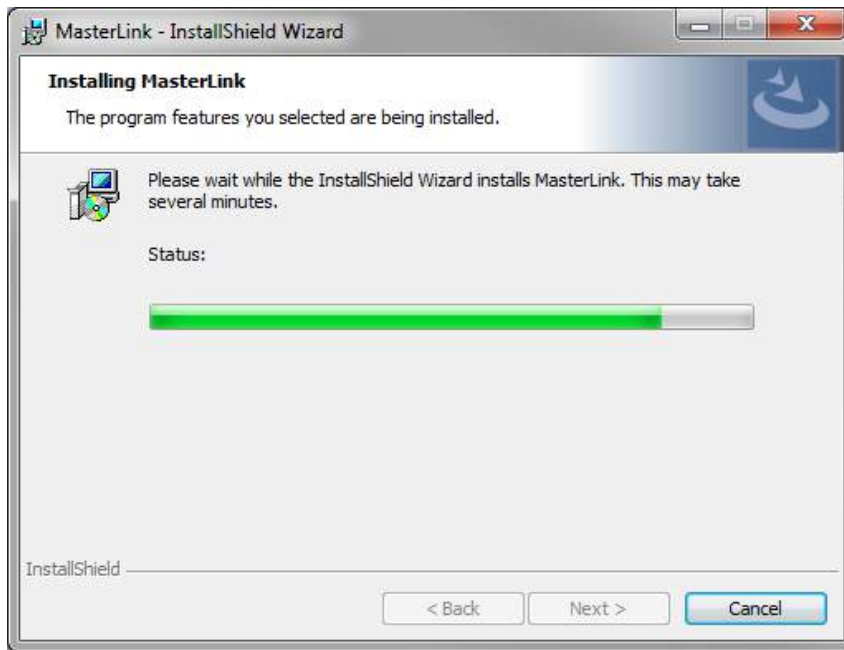


7. Click **Next**.

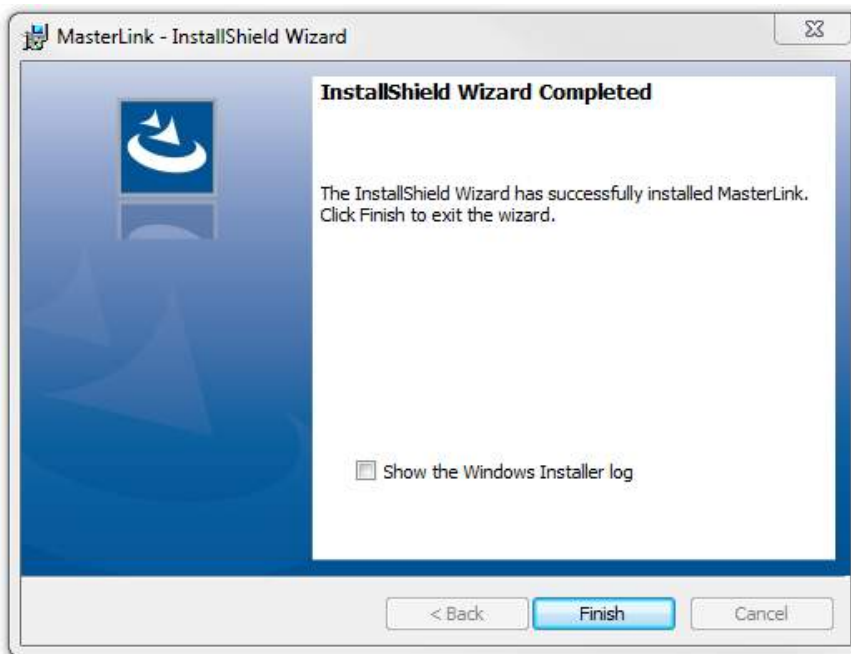
The *Ready to install the Program* page appears.



8. Click **Install** to continue.



9. Finally, click **Finish** to complete.



Note: Select the check box to view the Installer log.

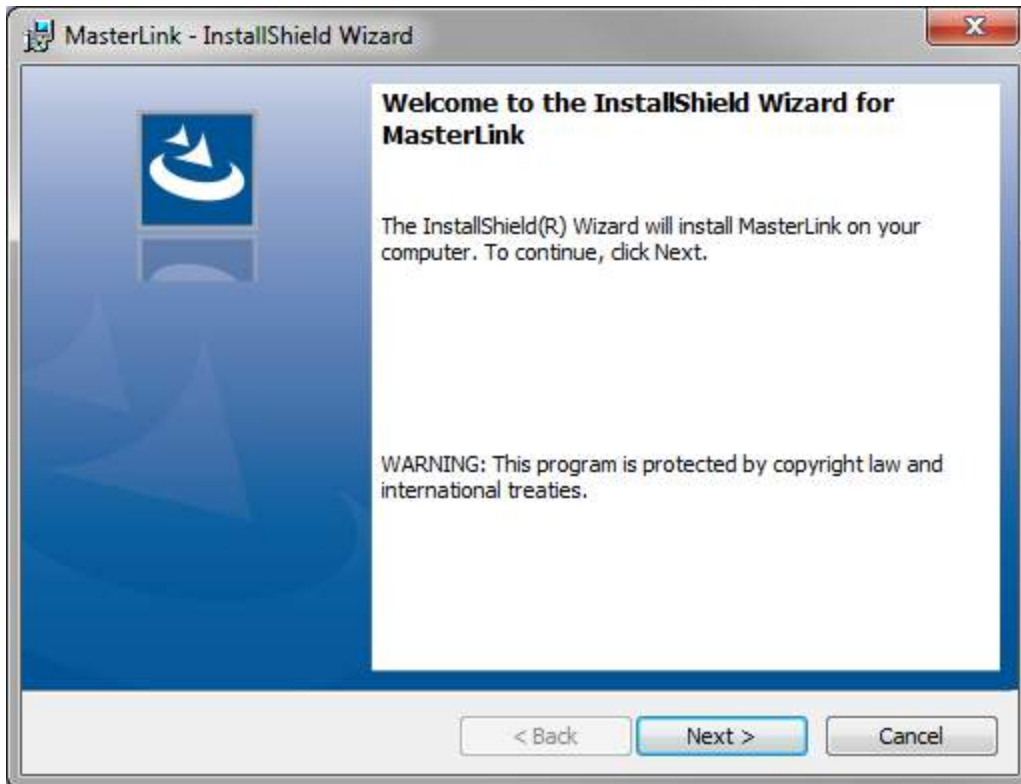
2.3.1 Installing MasterLink Software Application with remote SQL Server

Prerequisites:

If you are using SQL Server, then a SQL Server instance needs to be installed before installing MasterLink Software Application on Windows 8/8.1 or higher machines.

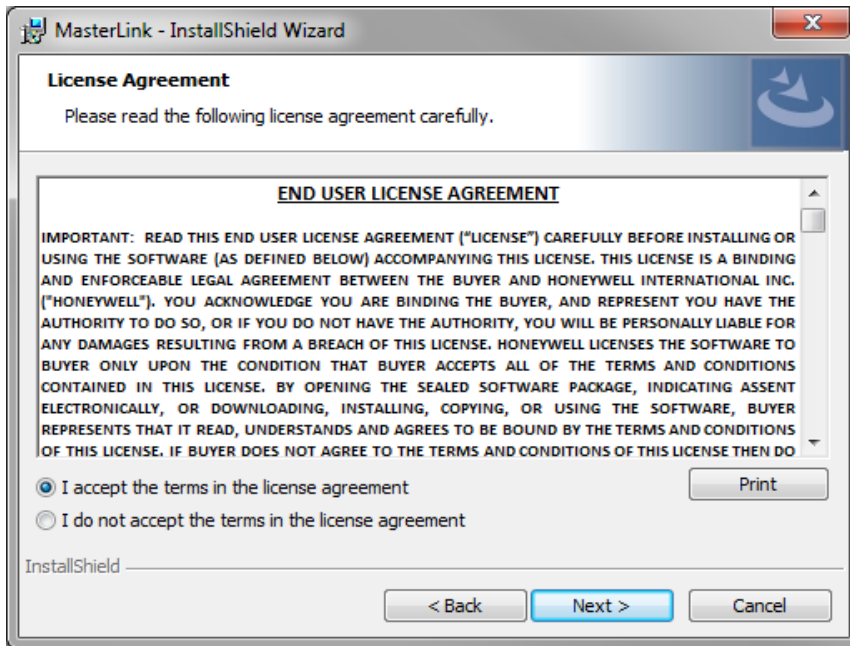
1. Right-click Setup file and then click *Run as administrator*.

The *MasterLink Software Application - InstallShield Wizard* appears.



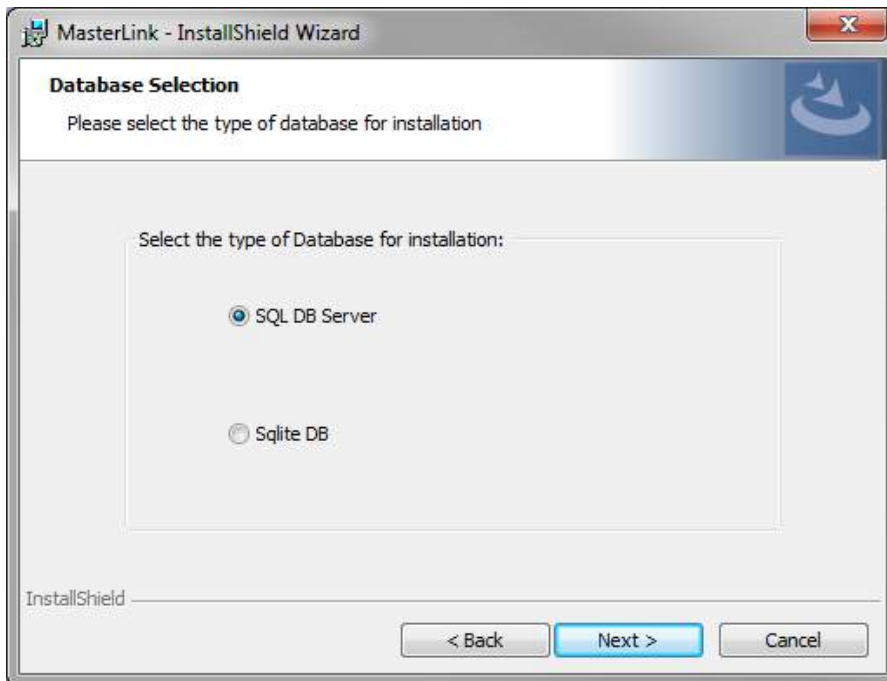
2. Click **Next**.

The *License Agreement* page appears.



3. Click *I accept the terms in the license agreement* and then click **Next**.

The *Database Selection* page appears.

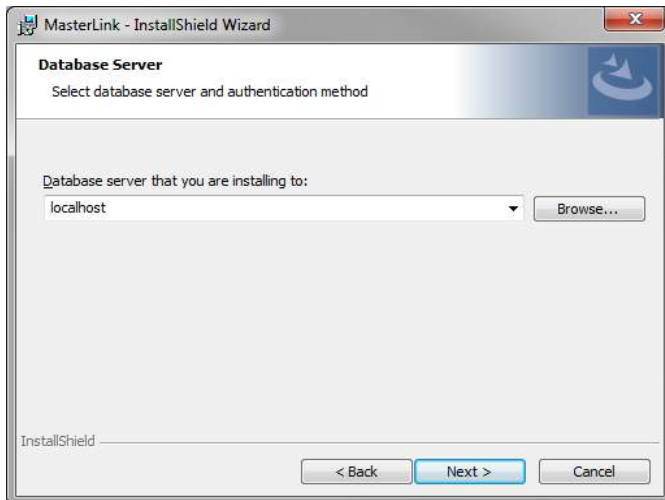


By default, *SQL DB Server* is selected.

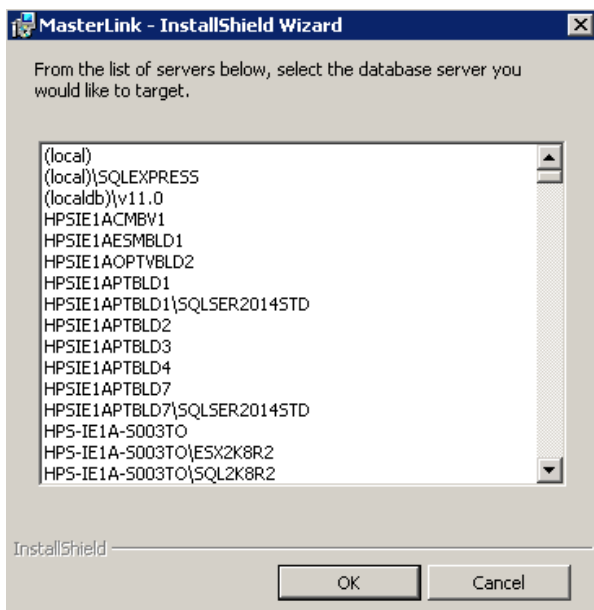
If you choose to continue with a *SQL DB Server* for installation, then you will see the following page (as shown in step 4), where you need to select the database server instance.

4. Click **Next**.

The *Database Server* page appears.



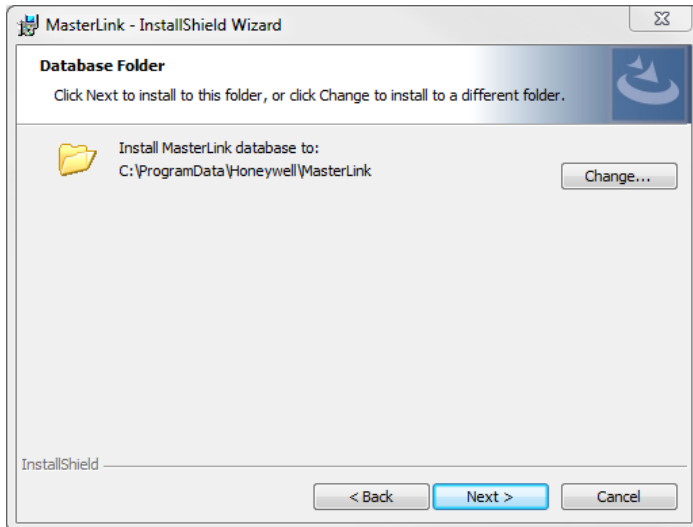
You can browse and select a database on your network.



Note: If you are using a database instance on your network, you need to have domain user permission.

5. Click **Next**.

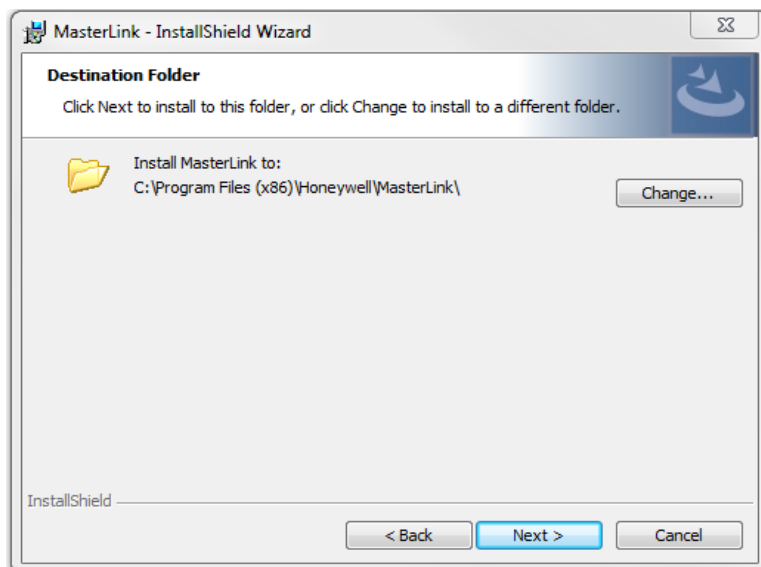
The *Database Folder* page appears. Click on **Change** and enter the path on the remote machine where user intends to create the Database files. The path must not exist on the machine where the installer is running



Note: The path selected on remote machine should not exist on remote machine.

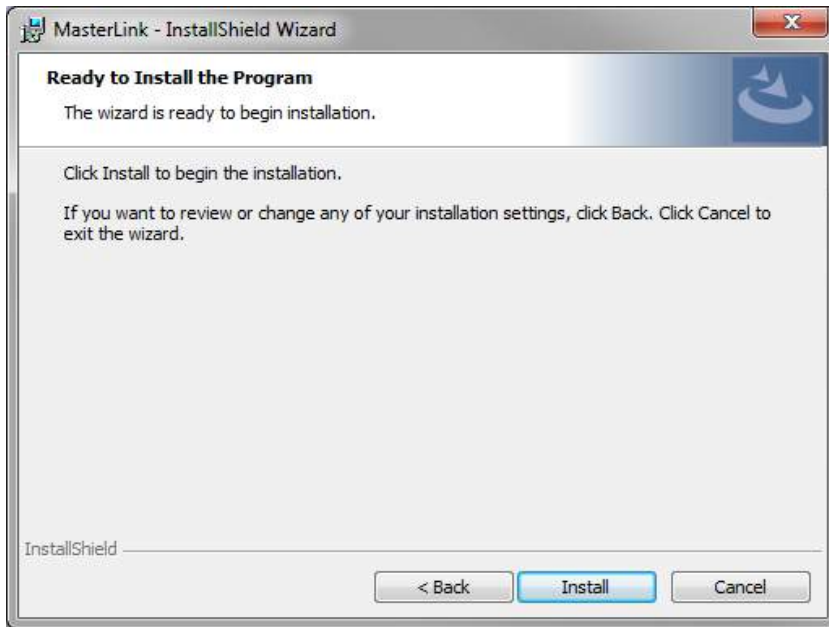
6. Click **Next**.

The *Destination folder* page appears, displaying information about the default destination folder. The path selected on remote machine should not exist on current machine where installer is running

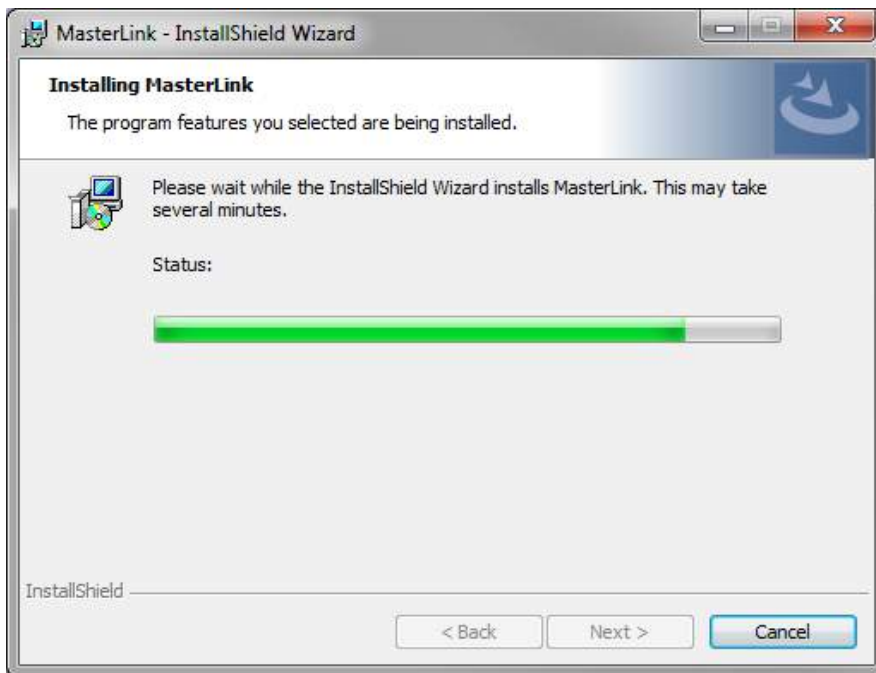


7. Click **Next**.

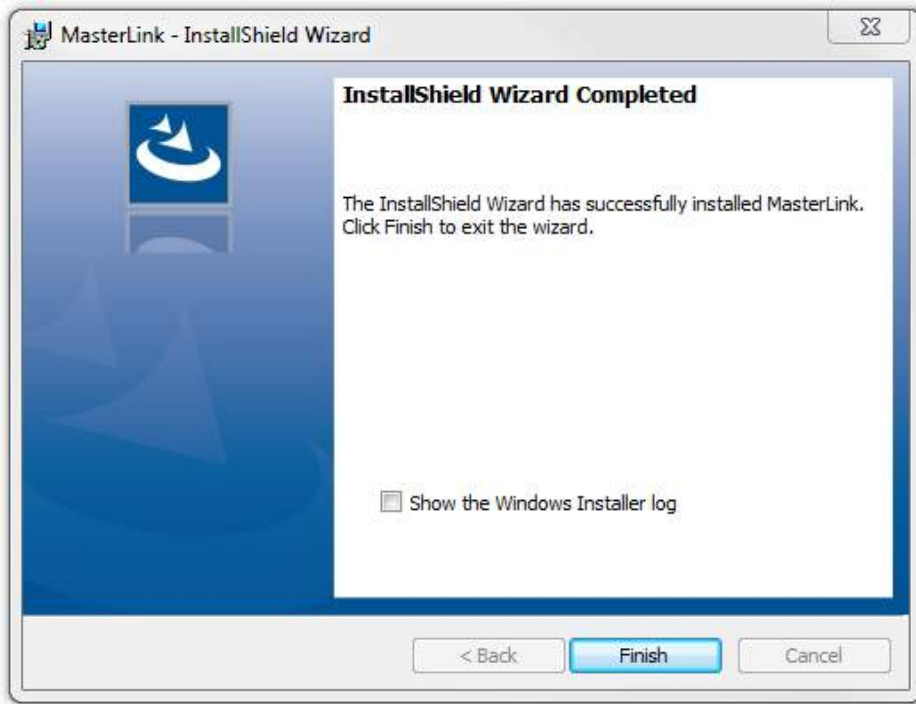
The *Ready to install the Program* page appears.



8. Click **Install** to continue.



9. Click **Finish** to complete.

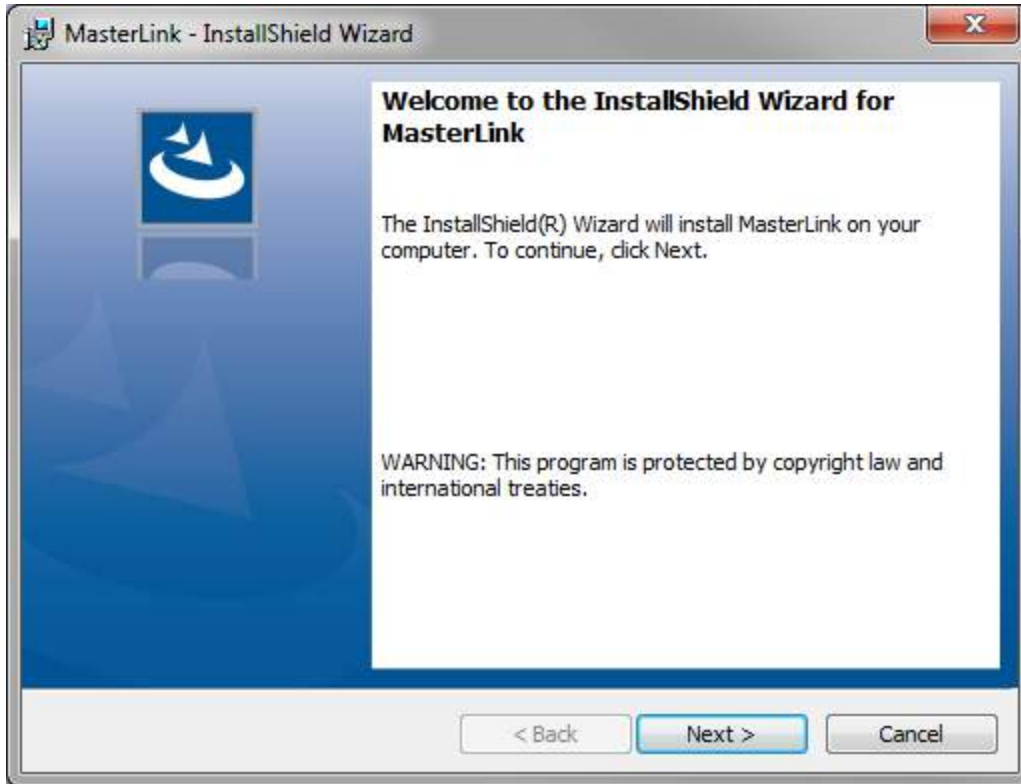


Note: Select the check box to view the Installer log.

2.4 Installing MasterLink Software Application with SQLite

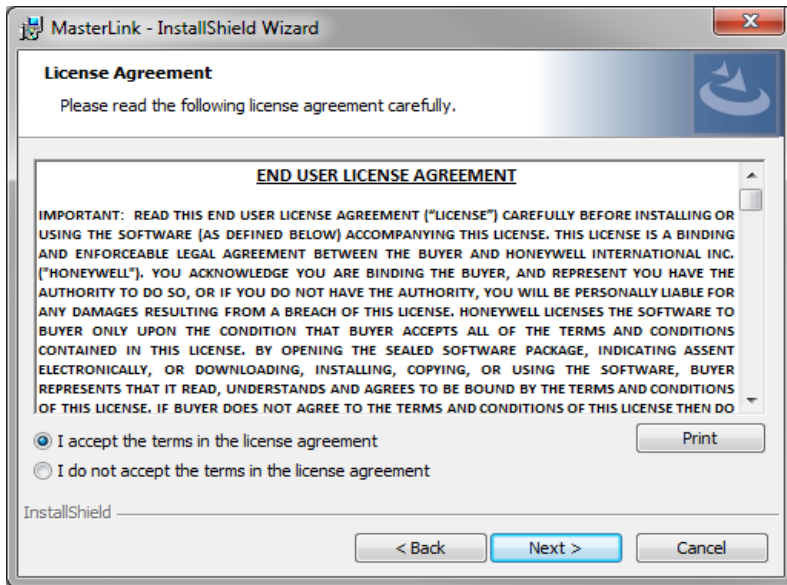
1. Right-click Setup file and then click *Run as administrator*.

The *MasterLink Software Application - InstallShield Wizard* appears.



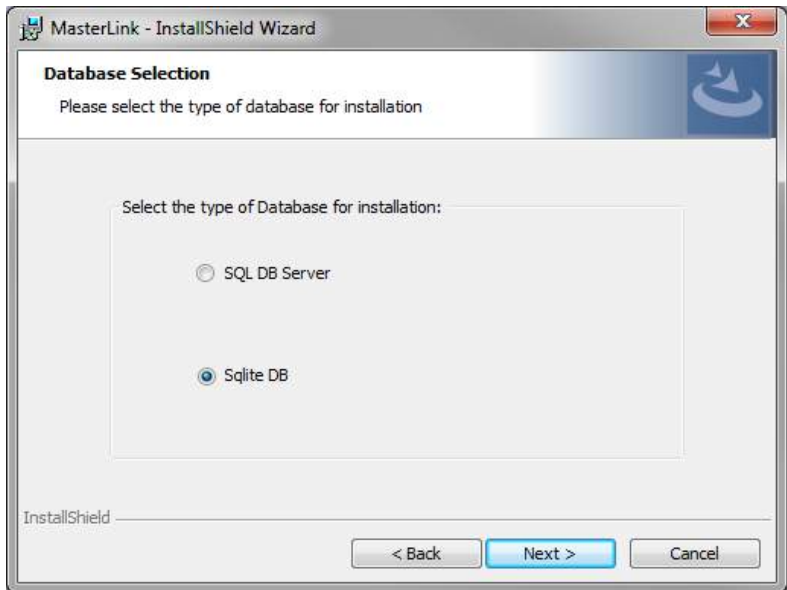
2. Click **Next**.

The *License Agreement* page appears.



3. Click *I accept the terms in the license agreement* and then click **Next**.

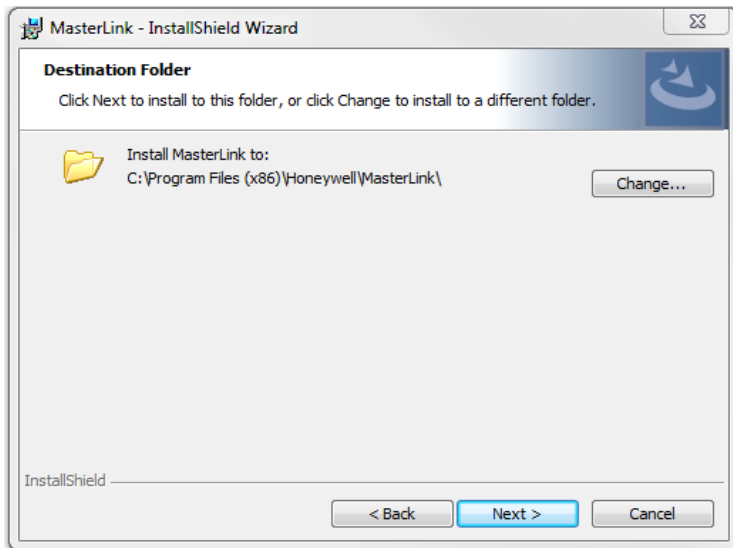
The *Database Selection* page appears.



By default, SQL DB Server is selected. User is required to select SQLite DB. By default, SQL DB Server is selected. User is required to select SQLite DB

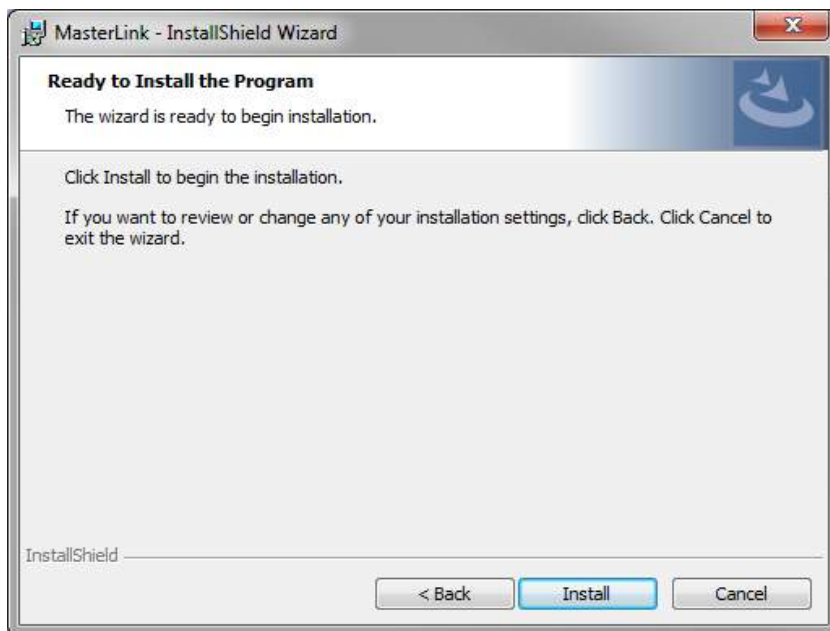
4. Click **Next**.

The *Destination folder* page appears, displaying information about the default destination folder.



5. Click **Next**.

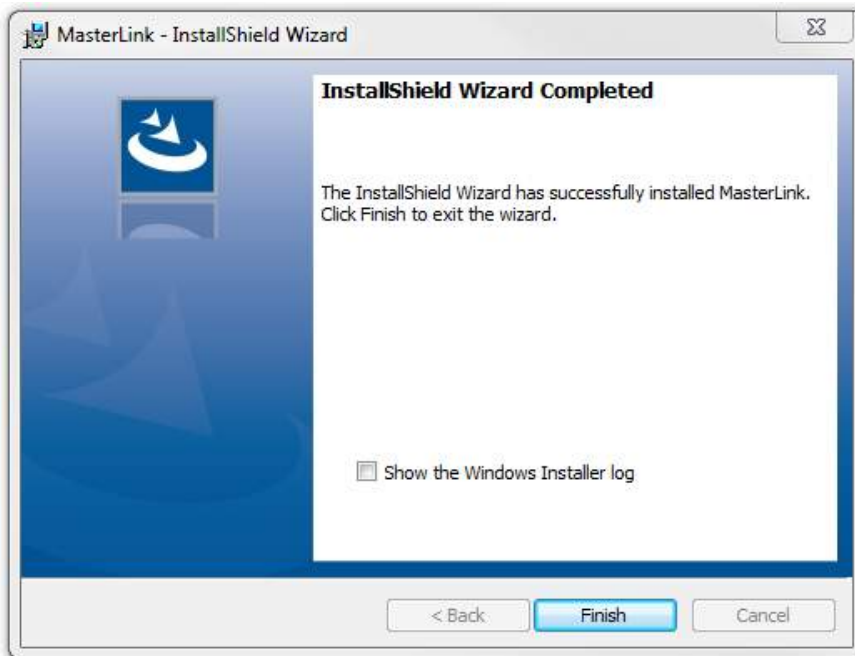
The *Ready to install the Program* page appears.



6. Click **Install** to continue.



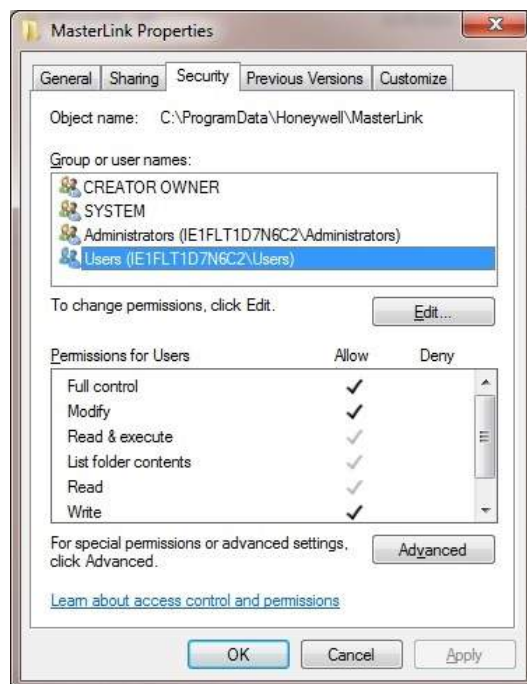
7. Click **Finish** to complete.



Note: Select the check box to view the Installer log.

3.1 Post Installation Steps

1. To log on to MasterLink application, users need access to C:\ProgramData\Honeywell\Masterlink. By default, all users under Users group has the required privileges. If a user falls under any other user group, then administrator should give “Full Control” privileges on folder “C:\ProgramData\Honeywell\Masterlink” for that particular user group.



2. If SQL server is used as a database while installing the MasterLink application, then all users who will use the application must be provided DBO access on SUITE32 database.

3.2 Software/Hardware Compatibility

This version of MasterLink software works with EC350 and CloudLink 4G Modem devices.

Instrument	Hardware Version	Firmware Version
EC350	Rev E	1.1032
CloudLink 4G Modem	Rev D	1.0001

CHAPTER 4

4 MasterLink Software Application User Interface

This chapter describes the steps of getting started with MasterLink Software Application . This chapter also explains the user interface along with the different features that are available in separate tabs.

Related topics:

[Getting Started](#)

[Sites](#)

[Dashboard](#)

[View /Edit](#)

[Calibrate](#)

[Read Data](#)

[Live Data](#)

[Administration](#)

[Settings](#)

[Security](#)

4.1 Getting Started

On launching the MasterLink Software Application, you will see a splash screen followed by a screen to log on.



4.1.1 User Creation and Activation Process

To start using MasterLink Application, one must create a Site Administrator user who can in turn create multiple users with different privileges based on the business requirements.

4.1.1.1 Site Administrator Creation

The Site Administrator should get a MasterLink license from Honeywell Process Solutions. This license key can be used to register a Site Administrator in the MasterLink Application. Contact [TAC team](#) to get your license key.

4.1.1.2 Creating Users

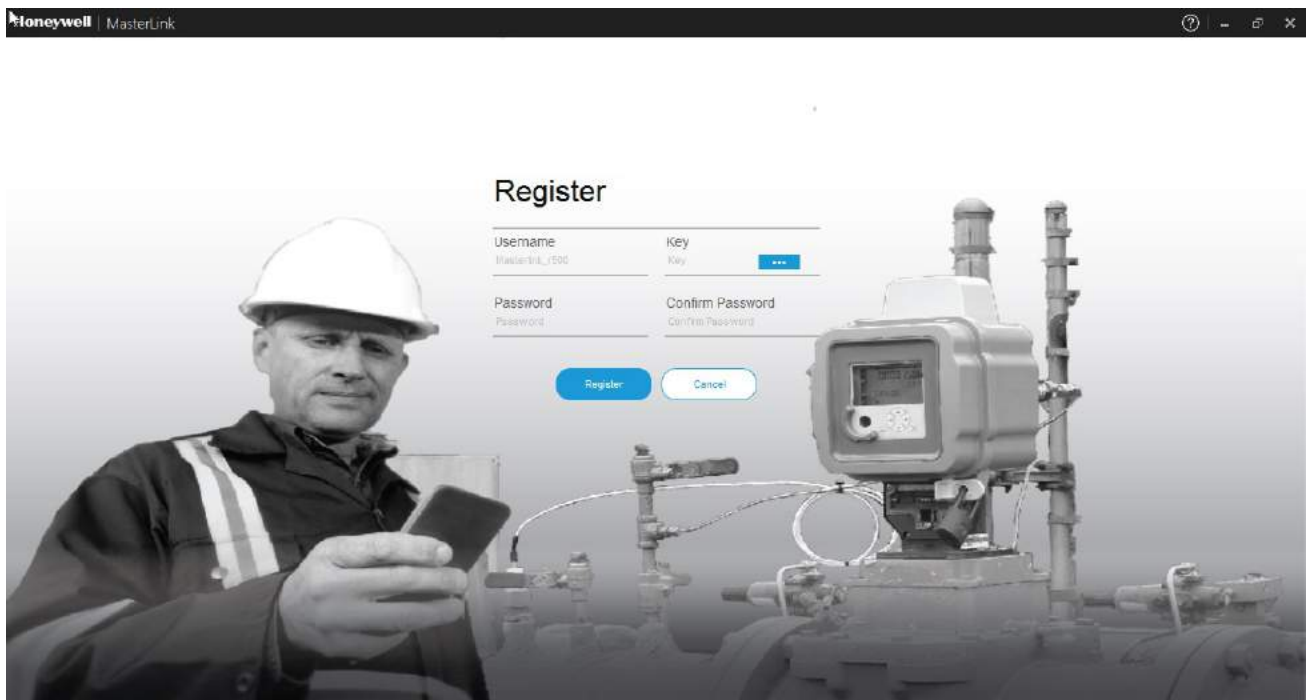
Once site administrator is registered, they can create new users using [Security](#) feature. To know more on passkey generation refer to [User Configuration](#).

For individual user, the generated license key must be emailed to the respective users allowing them to register and start using MasterLink application.

4.1.1.3 User Registration

For a first time user, click **New User** and register. User is required to register with license key provided by the site Administrators. The **Username** you enter while registering must match with the user name used while creating the license key.

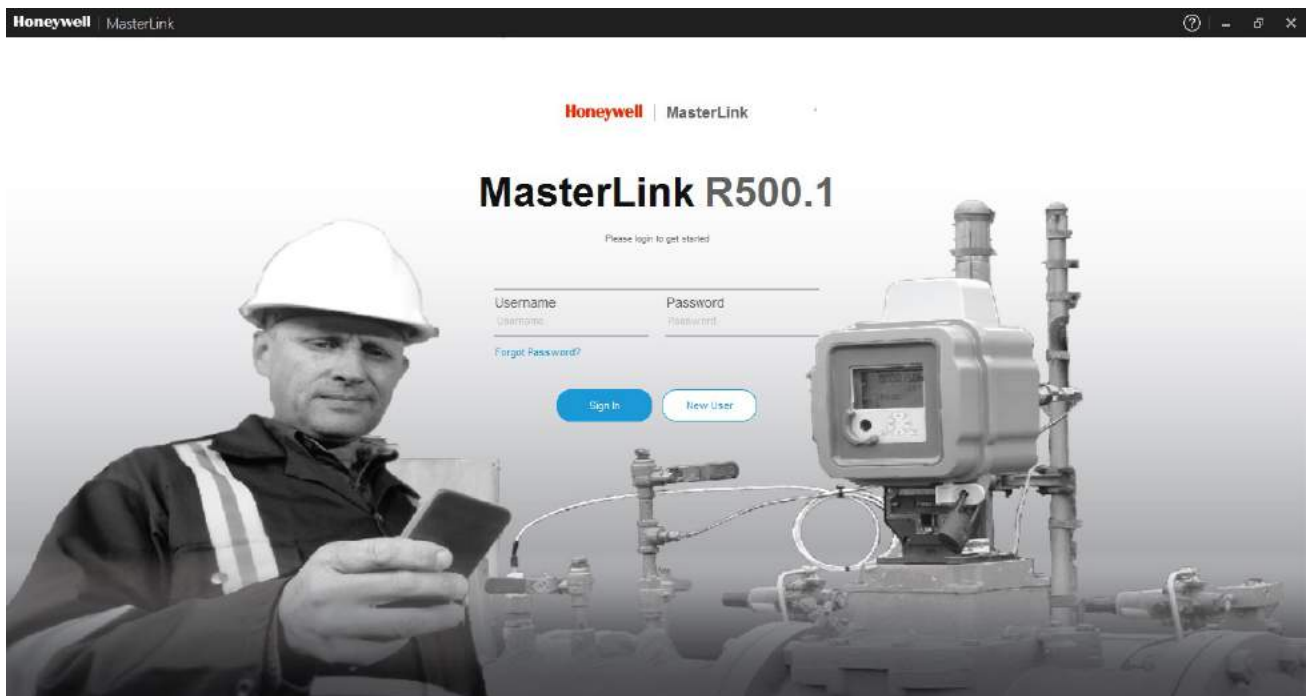
Enter the login details, browse and select the license key, and then click **Register**.



The screenshot shows the 'Register' screen of the Honeywell MasterLink application. The background features a worker in a hard hat and safety vest holding a smartphone, with industrial equipment in the background. The 'Register' title is centered at the top. Below it, there are four input fields: 'Username' (containing 'MasterLink_R500'), 'Key' (containing 'Key' and a blue button with three dots), 'Password', and 'Confirm Password' (containing 'Confirm Password'). At the bottom, there are two buttons: 'Register' (blue) and 'Cancel' (white with a blue border).

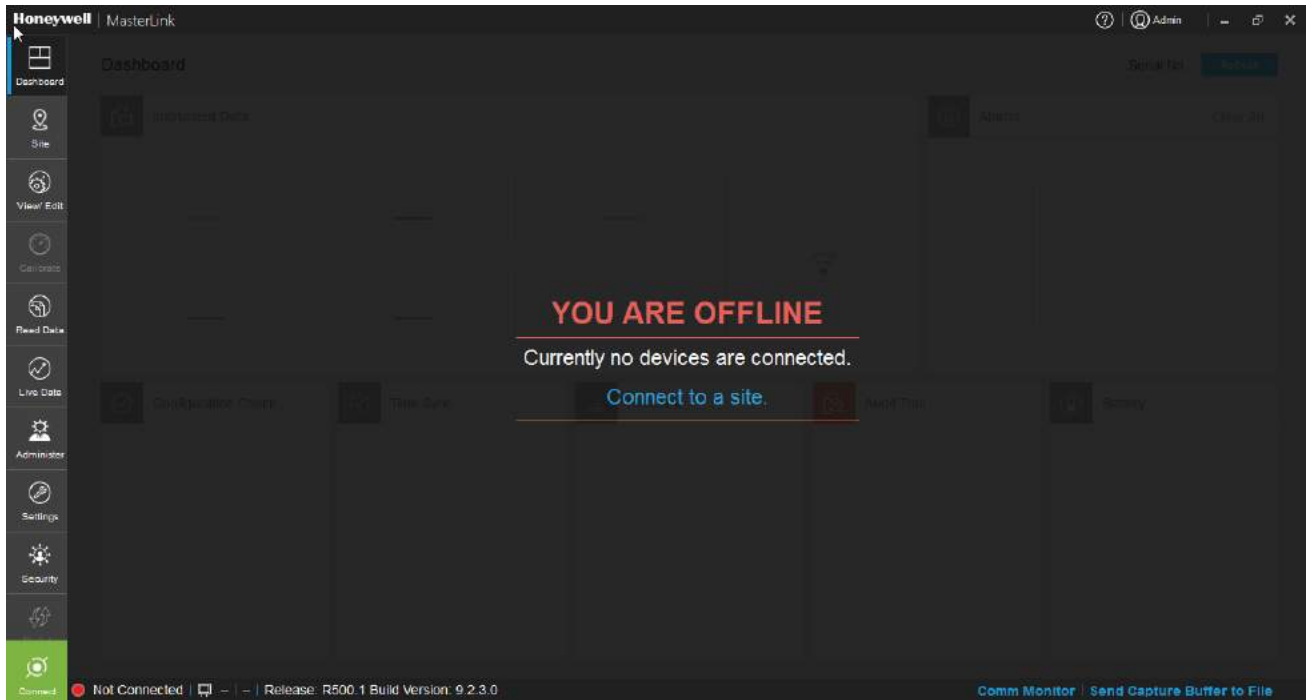
The Login screen appears.

Log on with your credentials. Click **Sign In**.



The screenshot shows the 'MasterLink R500.1' login screen. The background is the same as the previous screen. The title 'MasterLink R500.1' is centered at the top. Below it, the text 'Please login to get started' is displayed. There are two input fields: 'Username' (containing 'Username') and 'Password' (containing 'Password'). Below the 'Username' field is a link that says 'Forgot Password?'. At the bottom, there are two buttons: 'Sign In' (blue) and 'New User' (white with a blue border).

The following screen is displayed:



Refer **MasterLink Software Application Installation Guide** for understanding the prerequisites and installation instructions.

4.1.1.4 Forgot Password

If users forget their password they can reach out to the site Administrator for a new passkey. Once the key is received, users can reset their passwords by clicking the **Forgot Password** link. The Forgot Password screen appears.

Enter your username, browse and select the license key, and finally enter your new password. Click **Reset** to login with the new password.

Honeywell | MasterLink

Forgot Password

Username MasterLink_1500	Key Key <input type="button" value="v"/>
Password Password	Confirm Password Confirm Password

4.2 Sites

The 'Sites' screen lists all sites configured in the MasterLink application. A Site refers to:

- Integrated EC 350 (EC 350 with Cloud Link 4G Modem)
- Standalone EC 350
- Cloud Link 4G Modem

The user can also add a new Site, as well as edit or remove an existing Site. From the 'Sites' screen, users can connect to a device deployed on the field.

This section describes the steps to configure and add a site to MasterLink Software Application. It also explains how to connect and communicate with existing sites.

Note: In Coexistence scenario, any Cloud Link related sites that are added using New Master link will be displayed as “Unknown” sites in MasterlinkSQL.

Related topics:

[Direct Connect](#)

[Add Site](#)

[Connecting to a Site](#)

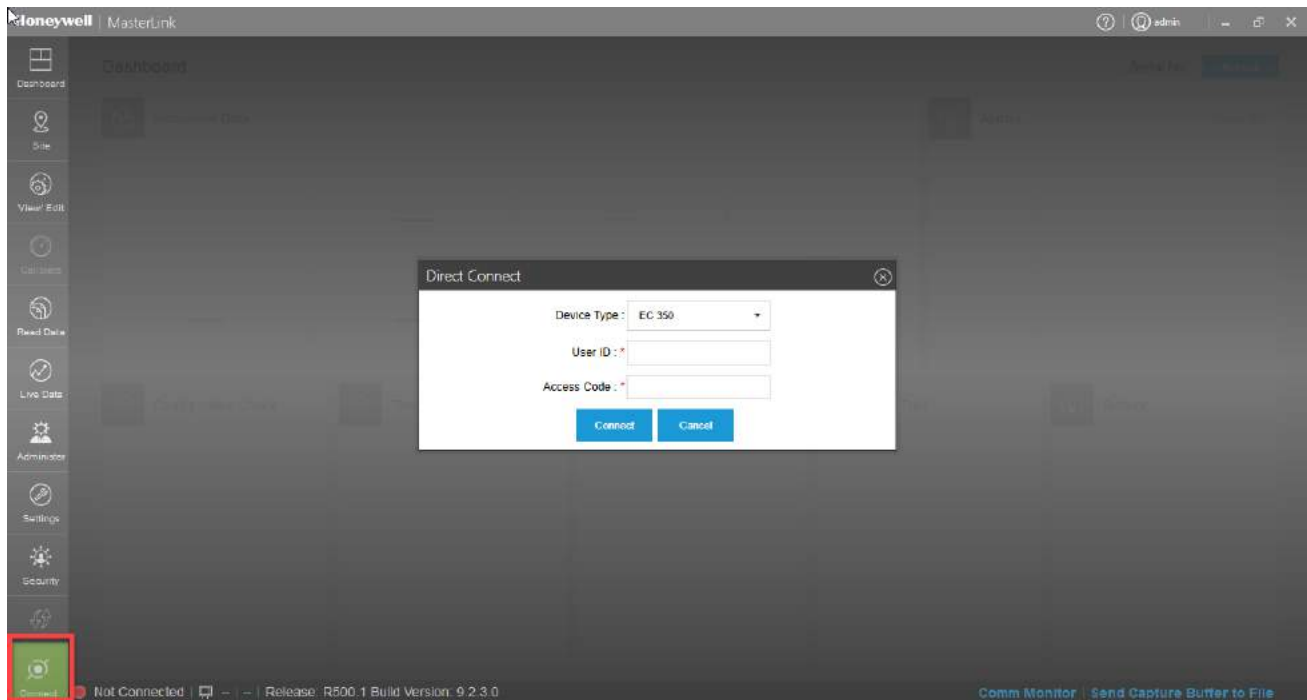
4.2.1 Direct Connect

The Direct Connect feature lets the application connect to a site which is physically connected to a computer.

The Direct Connect functionality works based on the serial port or IrDA settings configured under [Settings > Communications Setup](#).

To connect a device:

1. Physically connect the instrument using a serial or IrDA interface.
2. Configure the required communication settings, go to [Settings > Communications Setup](#)
3. Click **Connect** located at the bottom left, and then connect to an instrument using the **Direct Connect** pop-up.



4. Select the device type (EC 350, Cloud Link 4G Modem, or Integrated EC 350)
5. Type a **User ID** and **Access Code** and click **Connect**. (User ID and Access code is provided by System Administrator).
6. After connecting to an instrument users must manually add it to the site list.

4.2.2 Add Site

In the 'Site Management' screen, you can configure and connect to site.

A Site refers to:

- Integrated EC 350 (EC 350 with Cloud Link 4G Modem)
- Standalone EC 350
- Cloud Link 4G Modem

Site can be connected and configured over the following interfaces based on deployment (device type):

- Modem
- Serial
- Internet
- IrDA

The screenshot shows the Honeywell MasterLink Site Management interface. The sidebar on the left contains navigation icons for Dashboard, Site, View/Edit, Calendars, Read Data, Live Data, Administer, Settings, Security, and a status bar. The main content area displays a site named 'ec350site' with a device icon and 'Stand Alone' status. A 'Connect' button is highlighted with a red box, and below it are tabs for 'Modem', 'Serial', 'Internet', and 'IrDA'. The configuration form includes fields for Instrument Type (EC 350), Site Name (ec350site), Site Location (hyd), Site ID (00000000), Site ID 2 (00000000), User ID (0), Instrument Access Code (****), InternetPhone (None), Site Phone/IP Address, SSL Private Key, Modem ID (0), Modem Port (None), and Post Modem Command. A status bar at the bottom indicates 'Not Connected' and provides release and build version information.

Note: Before adding a new site, ensure that you have configured your communication settings under [Settings > Communications Setup](#).

Click **Add Site** to create a new site or a field device. This function is used to add site information to the Site List.

The screenshot shows the 'Site Management' window in the Honeywell MasterLink application. The title bar includes the Honeywell logo, 'MasterLink', and a user profile 'admin'. A left sidebar contains icons for Dashboard, Site, View/Edit, Calibrate, Read Data, Live Data, Administer, Settings, and Security. The main area is titled 'EC350 + Cloud Link Integrated Mode'. It contains a form with the following fields: Instrument Type (dropdown menu), InternetPhone (dropdown menu), Site Name * (text field), Site Location (text field), Site ID * (text field), Site ID 2 * (text field), User ID * (text field), Instrument Access Code * (text field), Site Phone/IP Address * (text field), SSL Private Key (text field), Modem ID (text field), Modem Port (dropdown menu), and Post Modem Command (text field). There are checkboxes for UDP and SSL. A message in the center says 'Configure the site details and click **Save**'. At the bottom are 'Save' and 'Cancel' buttons. The status bar at the bottom shows 'Connected (EC 350)', 'ec350site', '00000000 - 00000000', 'Release: R500.1 Build Version: 9.2.3.0', 'Comm Monitor', and 'Send Capture Buffer to File'.

While entering your site information, you must provide a Site Name, Site ID1 and ID2, and Instrument Access Code before the entry is accepted. Ensure the correct Instrument Type is selected. The instrument type can be **EC 350**, **Cloud Link**, and **integrated EC 350 + Cloud Link**.

Click **Save** to add site.

Click **Cancel** to abort this entry and return to the *Site Management*.

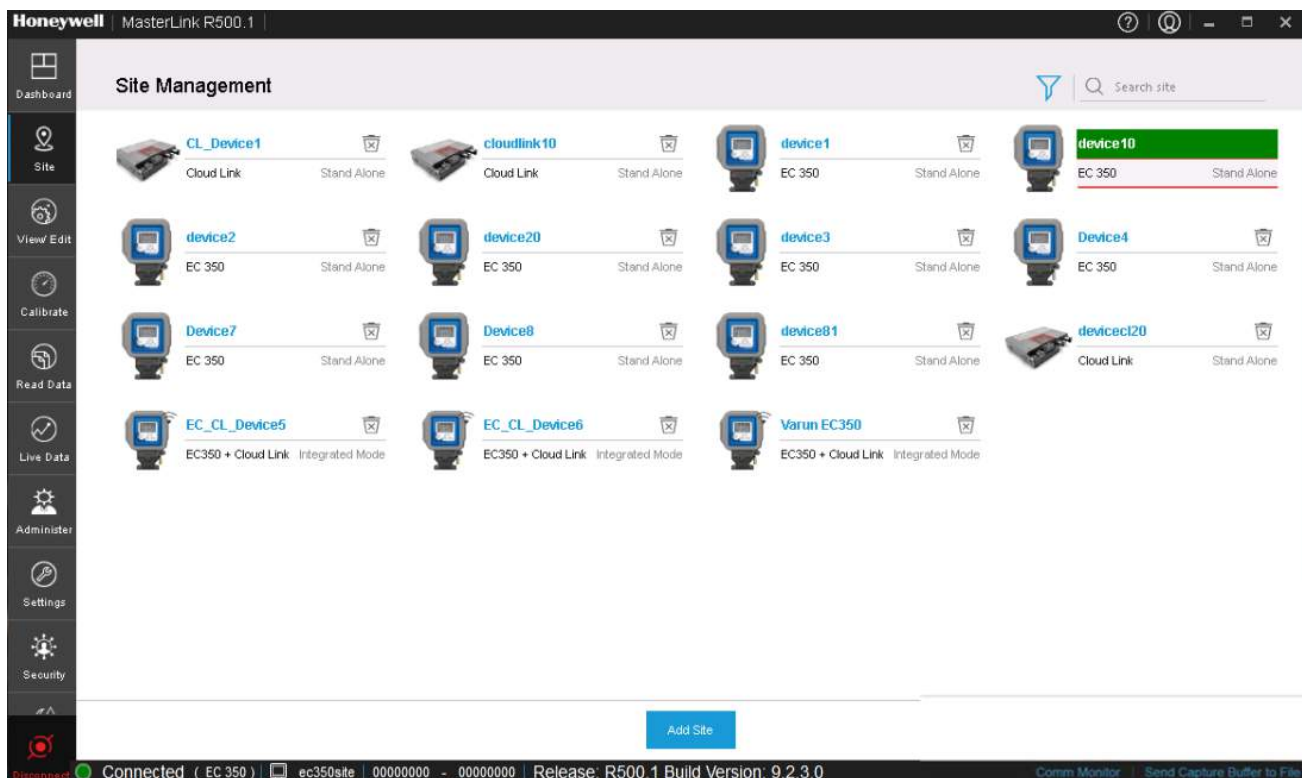
This screenshot shows the 'Site Management' window with a list of sites at the top. A site named 'ec350site' of type 'EC 350' is listed as 'Stand Alone'. A 'Filter or Search Site' box is overlaid on the list. Below the list, the 'Add Site' form is visible, with the 'Instrument Type' dropdown menu open, showing three options: 'EC 350', 'Cloud Link', and 'EC350 + Cloud Link'. The form fields are pre-filled with the same data as in the previous screenshot. The status bar at the bottom shows 'Not Connected', 'ec350site', 'Release: R500.1 Build Version: 9.2.3.0', 'Comm Monitor', and 'Send Capture Buffer to File'.

Note: It is recommended to use cellular modems instead of land-line modems for more secure communication.

For sites using the Communications / Special Connection setup (which use TCP/IP modems), enter the following details based on the selection of Internet/Phone dropdown:

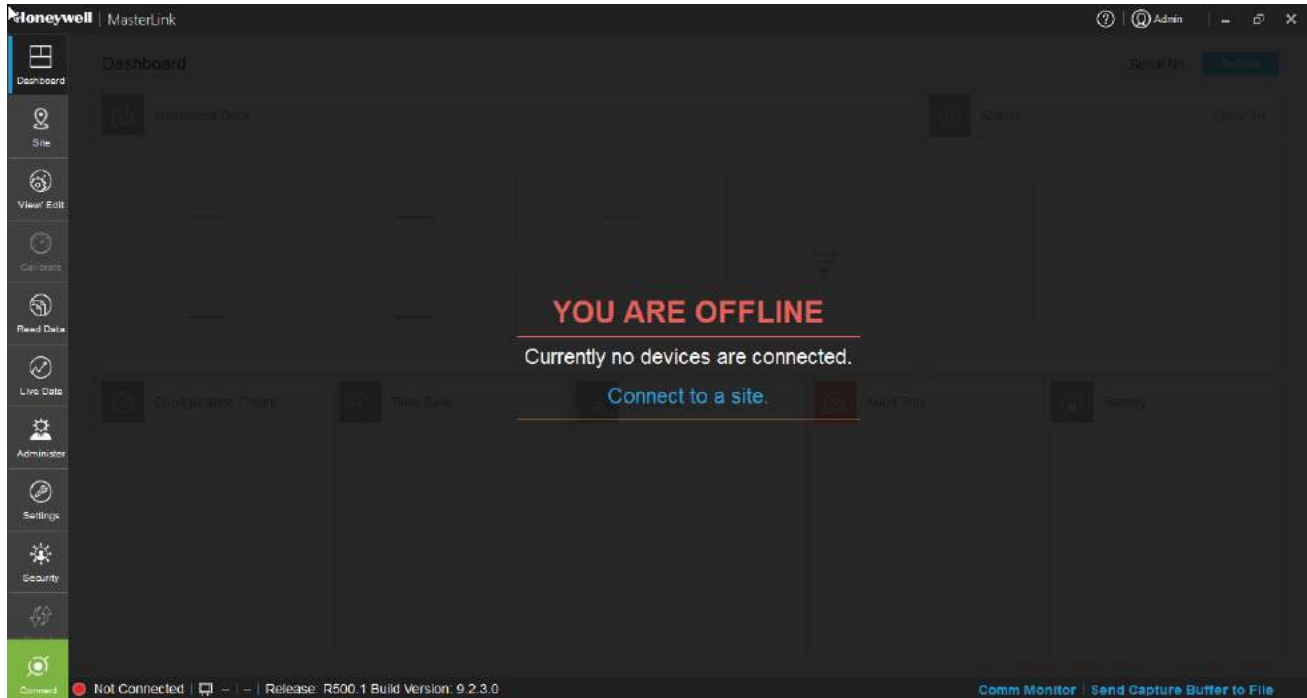
- If IPv4 is selected, enter IP address and port number in the respective fields.
- If a Land Line Modem is used, user should provide the site phone number in the Site Phone / IP Address field.

After adding the site, the new site appears in the list of sites.



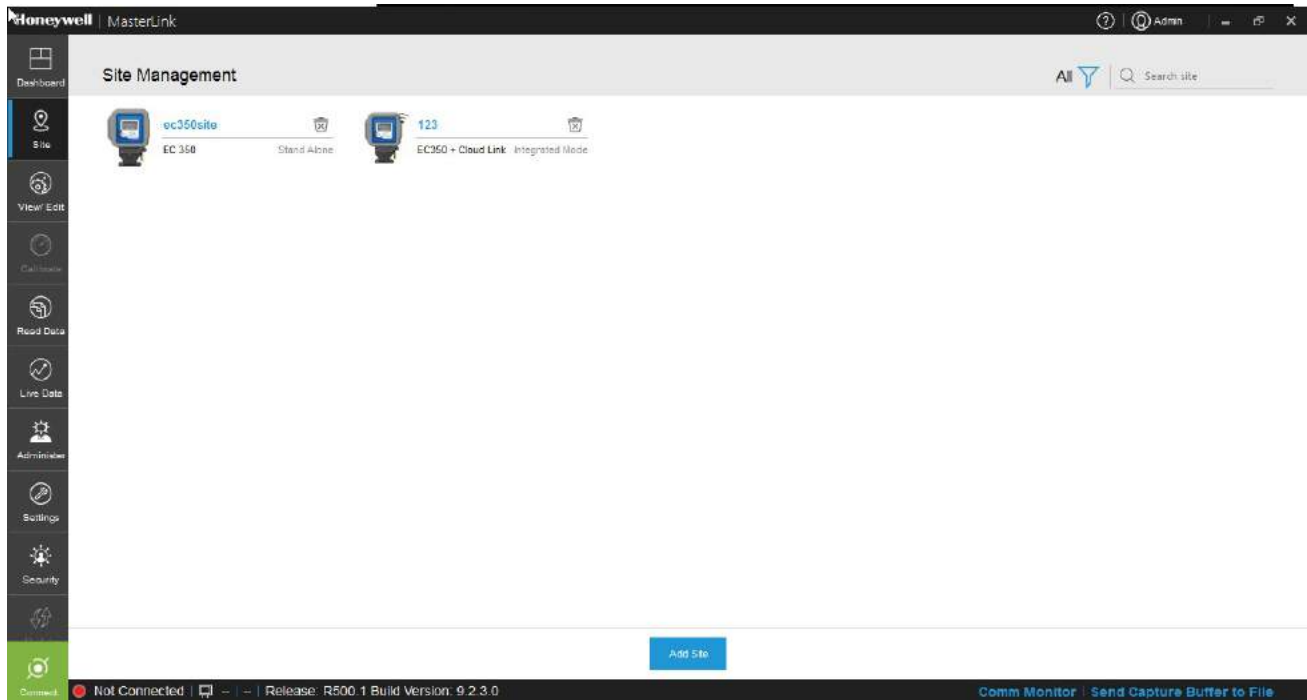
4.2.3 Connecting to a Site

When you log on to MasterLink Software Application and if you are not connected to a site or a device, you will see the following screen.



Click on the **Site** tab or the **Connect to a Site** link to get started.

Configured sites can be connected using the 'Site Management' screen of MasterLink Software Application.



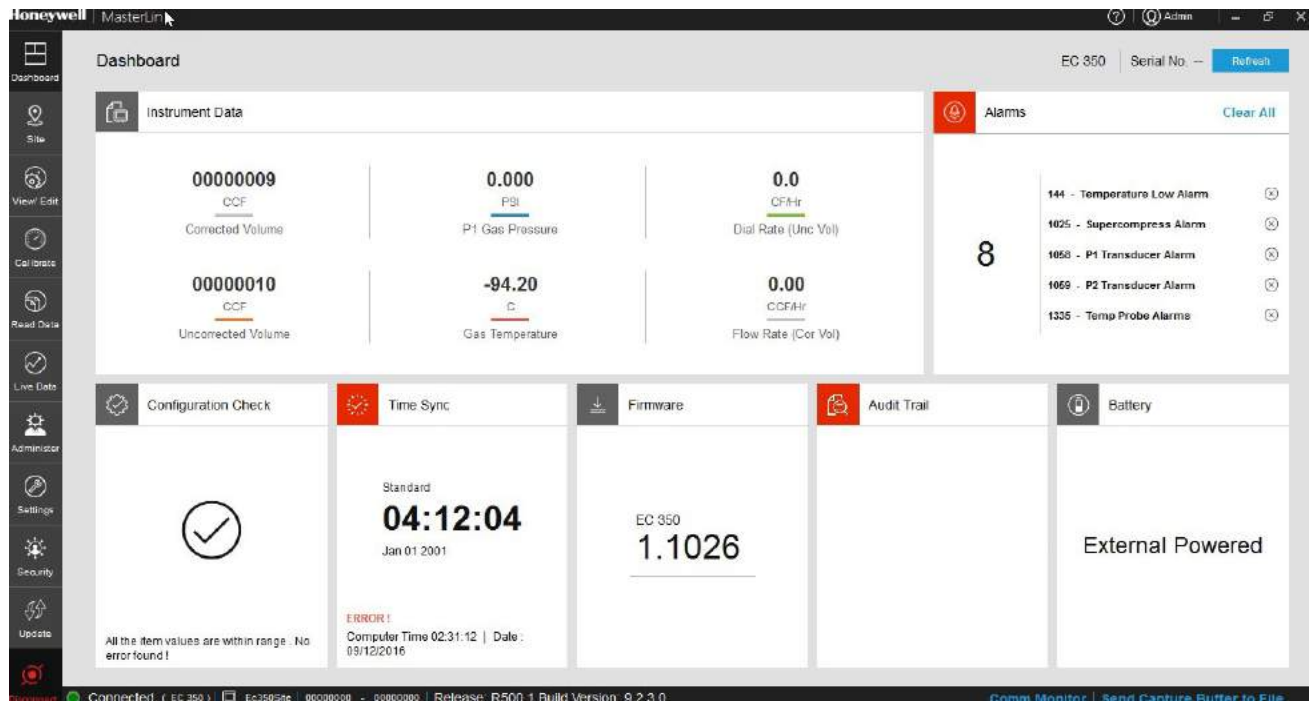
Following interfaces can be used to connect a site based on deployment (device type configured).

- Modem - EC 350 EC 350
- Serial - EC 350 EC 350 or EC 350 CloudLink
- Internet - Integrated EC 350, EC 350 EC 350 or EC 350 CloudLink
- IrDA - EC 350 EC 350 or Integrated EC 350

Note: To connect an instrument through serial interface or modem configure the communication settings in the [Settings](#) tab.

After successfully connecting to the device, the dashboard starts downloading the data.

Note: It is recommended that the user waits till the dashboard data is loaded.



Note: Panels with red icons indicate that user attention is required.

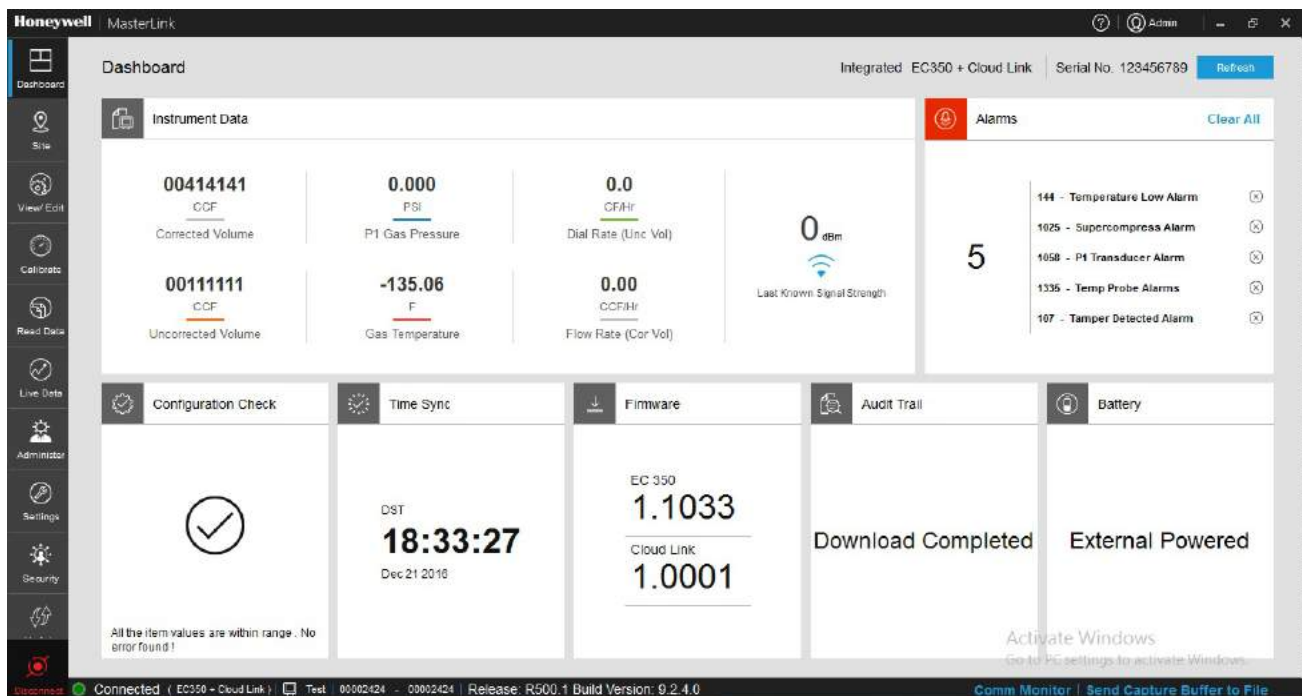
4.3 Dashboard

On successful site connection, dashboard data gets loaded automatically based on the 'Auto Download Settings'.

Dashboard has various panels that show current data from the connected site. The dashboard automatically reads and displays the following data:

- Critical instrument data
- Last call details (when MasterLink Software Application R500.1 is used)
- Active alarms
- Configuration checks based on the item template file
- Time Sync
- Firmware
- Audit Trail data
- Battery status

Using Data Download Settings, you can configure the dashboard data and as per your requirement.



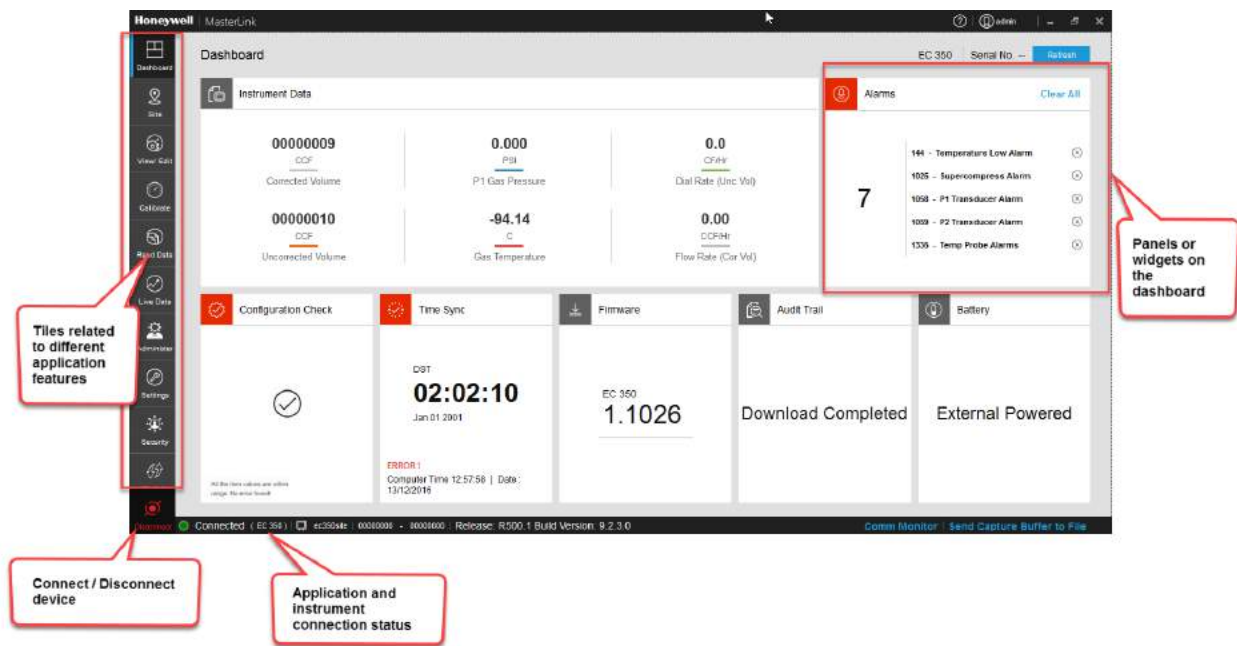
Note: The instrument data can vary based on the connected device type.

The dashboard has various panels containing instrument data, organized in panels. User can further drill down to see relevant data by clicking on respective panels.




4.3.1 User Interface

User Interface consists of the following sections:

- Tiles related to the application features include:
 - Dashboard
 - Site
 - View/Edit
 - Calibrate
 - View Data
 - Live Data
 - Administrator
 - Settings
 - Security
 - Updates

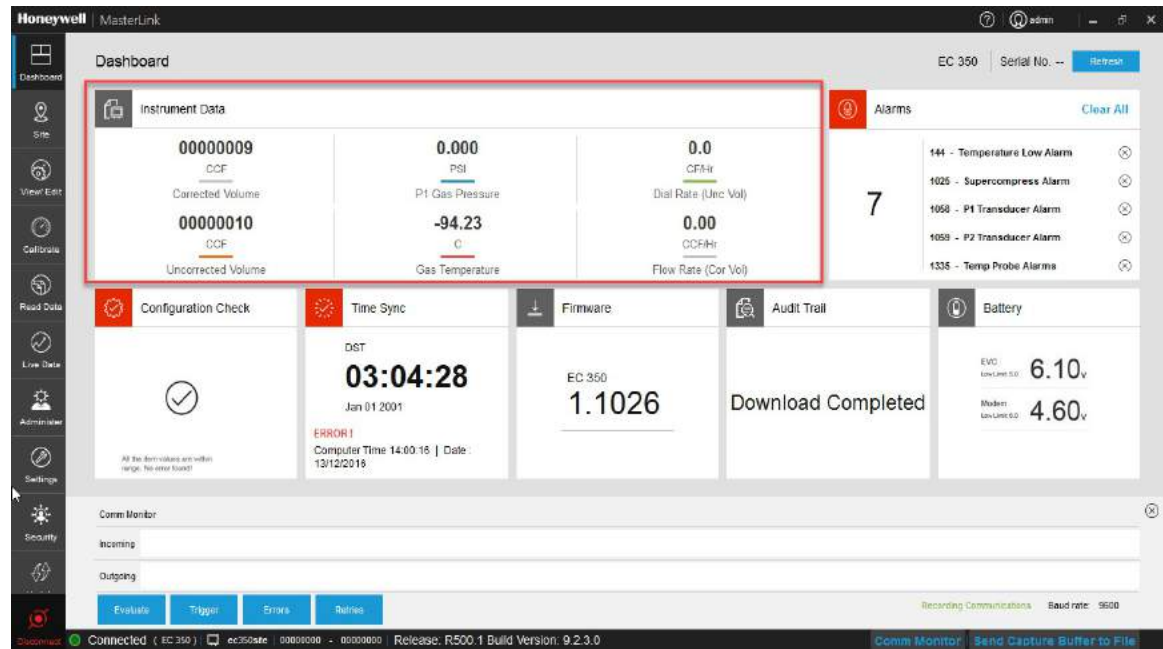


- Header contains application information and user options
- Footer contains the following information:

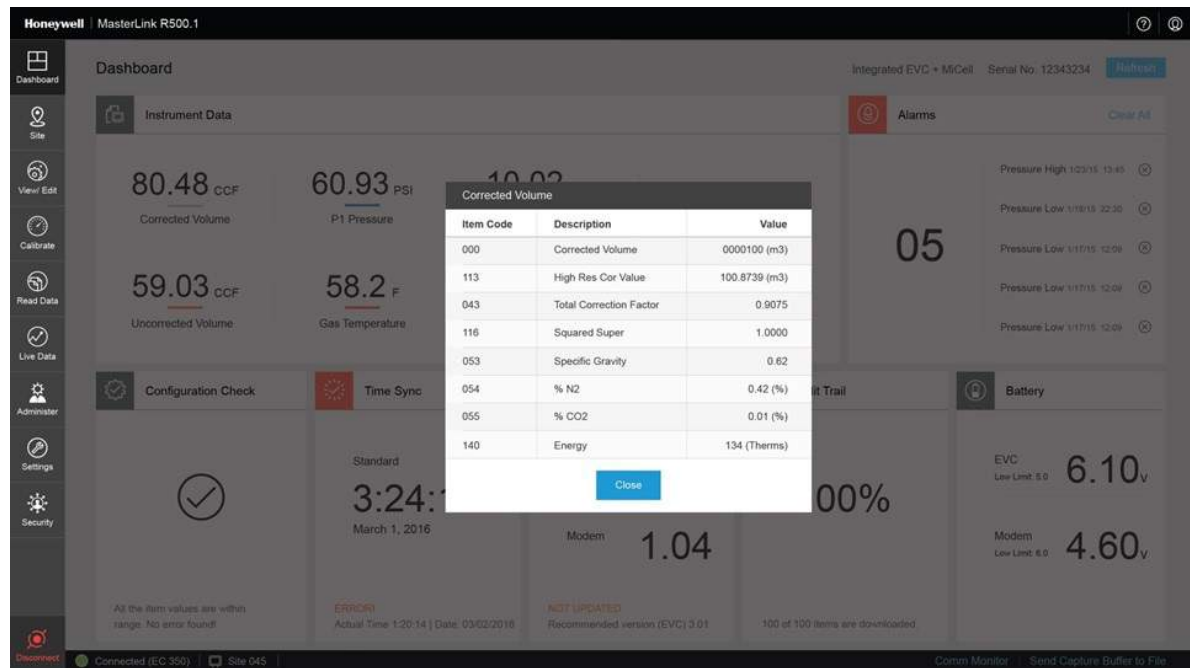
Icons	<p>The icons displayed on the footer is used to illustrate the following:</p> <p> - Not connected to any site</p> <p> - Connecting to a site</p> <p> - Connected to a site</p>
Release number	R500.1
Build version	9.2.4.0
Comm Monitor	Displays all the communications (command/responses) between MasterLink application and the connected site.
Send Capture Buffer to File	Allows the user to save all the communication into a file for analysis.

4.3.2 Instrument Data

The Dashboard shows current instrument data from the connected site. This data is read from the instrument and displayed under the *Instrument Data* widget.

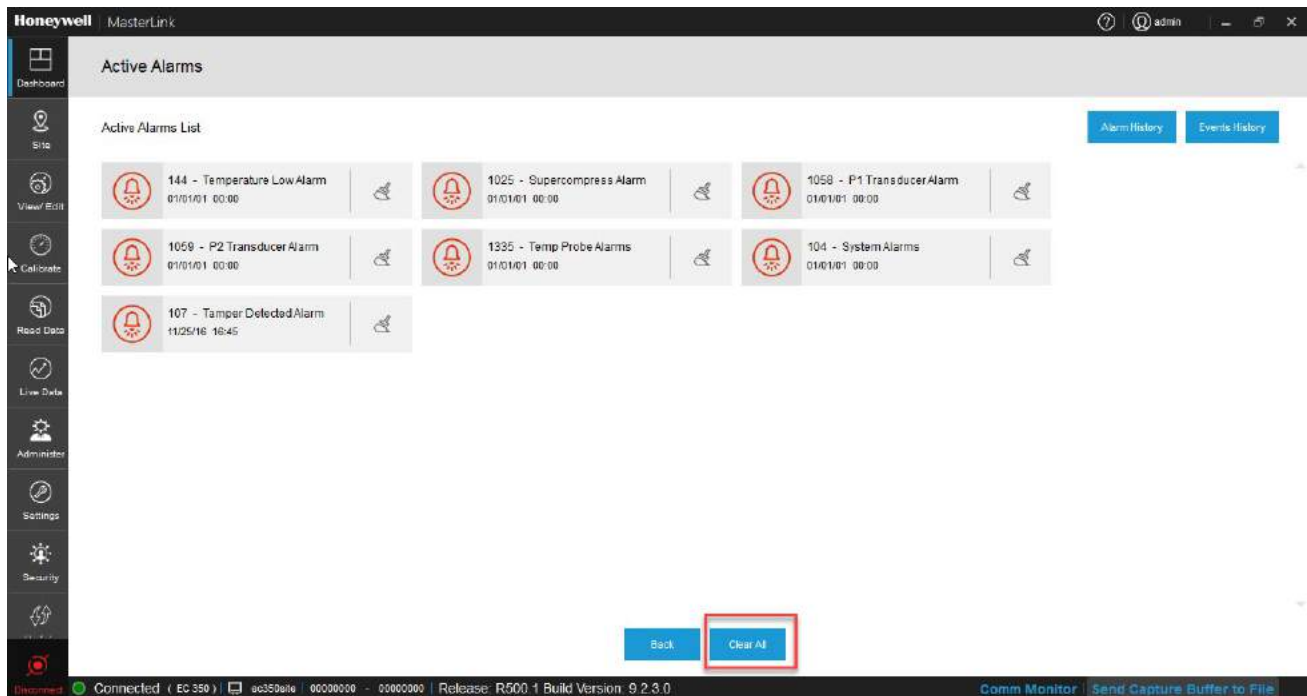



On clicking any value, further details are displayed.



4.3.3 Alarms

User can drill down to alarm and event history by clicking on the number of active alarms displayed on the dashboard.



Individual alarms can be cleared by clicking 

All active alarms can be cleared at once, by clicking **Clear All**.

User can access alarms and event log reports from the Dashboard.

Honeywell MasterLink

Alarm Log Report

Report Name: Alarm Log Report
Report Selections: 1 site, From: 10-12-2016 07:19:58 To: 21-12-2016 16:41:47

Site info: 00000000.00000000 View

Site ID: 00 | Site Name: ec350site | Site Location: hyd

Date	Time	Alarm Type	Item #	Alarm Desc	Alarm Value	Alarm Limit
12/10/2016	07:19:58	Alarm	99	Battery Low Alarm	3.092	4.600
01/01/2001	00:00:02	Alarm	107	Tamper Detected Alarm	11111111	00000000
01/01/2001	00:00:02	Alarm	1058	P1 Transducer Alarm	8	00000000
01/01/2001	00:00:02	Alarm	1059	P2 Transducer Alarm	8	00000000
01/01/2001	00:00:02	Alarm	1335	Temp Probe Alarms	4	00000000
01/01/2001	00:00:02	Alarm	144	Temperature Low Alarm	-94.56	-37.22
01/01/2001	00:00:02	Alarm	1025	Supercompress Alarm	10	00000000
01/01/2001	00:00:31	Alarm Ack	144	Temperature Low Alarm	-94.11	-37.22
01/01/2001	00:00:31	Alarm Ack	1025	Supercompress Alarm	10	00000000
01/01/2001	00:00:31	Alarm Ack	1058	P1 Transducer Alarm	8	00000000
01/01/2001	00:00:31	Alarm Ack	1059	P2 Transducer Alarm	8	00000000
01/01/2001	00:00:31	Alarm Ack	1335	Temp Probe Alarms	4	00000000
01/01/2001	00:00:31	Alarm Ack	107	Tamper Detected Alarm	11111111	00000000

Print Destination: Adobe PDF Back Preview Print

Disconnected Connected (EC 350) ec350site 00000000 - 00000000 Release: R500.1 Build Version: 9.2.3.0 Comm Monitor | Send Capture Buffer to File

Honeywell MasterLink

Alarm Log Report

Report Name: Alarm Log Report
Report Selections: 1 site, From: 10-12-2016 07:19:58 To: 21-12-2016 16:41:47

Site info: 00000000.00000000 View

Site ID: 00 | Site Name: ec350site | Site Location: hyd

Date	Time	Alarm Type	Item #	Alarm Desc	Alarm Value	Alarm Limit
12/10/2016	07:19:58	Alarm	99	Battery Low Alarm	3.092	4.600
01/01/2001	00:00:02	Alarm	107	Tamper Detected Alarm	11111111	00000000
01/01/2001	00:00:02	Alarm	1058	P1 Transducer Alarm	8	00000000
01/01/2001	00:00:02	Alarm	1059	P2 Transducer Alarm	8	00000000
01/01/2001	00:00:02	Alarm	1335	Temp Probe Alarms	4	00000000
01/01/2001	00:00:02	Alarm	144	Temperature Low Alarm	-94.56	-37.22
01/01/2001	00:00:02	Alarm	1025	Supercompress Alarm	10	00000000
01/01/2001	00:00:31	Alarm Ack	144	Temperature Low Alarm	-94.11	-37.22
01/01/2001	00:00:31	Alarm Ack	1025	Supercompress Alarm	10	00000000
01/01/2001	00:00:31	Alarm Ack	1058	P1 Transducer Alarm	8	00000000
01/01/2001	00:00:31	Alarm Ack	1059	P2 Transducer Alarm	8	00000000
01/01/2001	00:00:31	Alarm Ack	1335	Temp Probe Alarms	4	00000000
01/01/2001	00:00:31	Alarm Ack	107	Tamper Detected Alarm	11111111	00000000

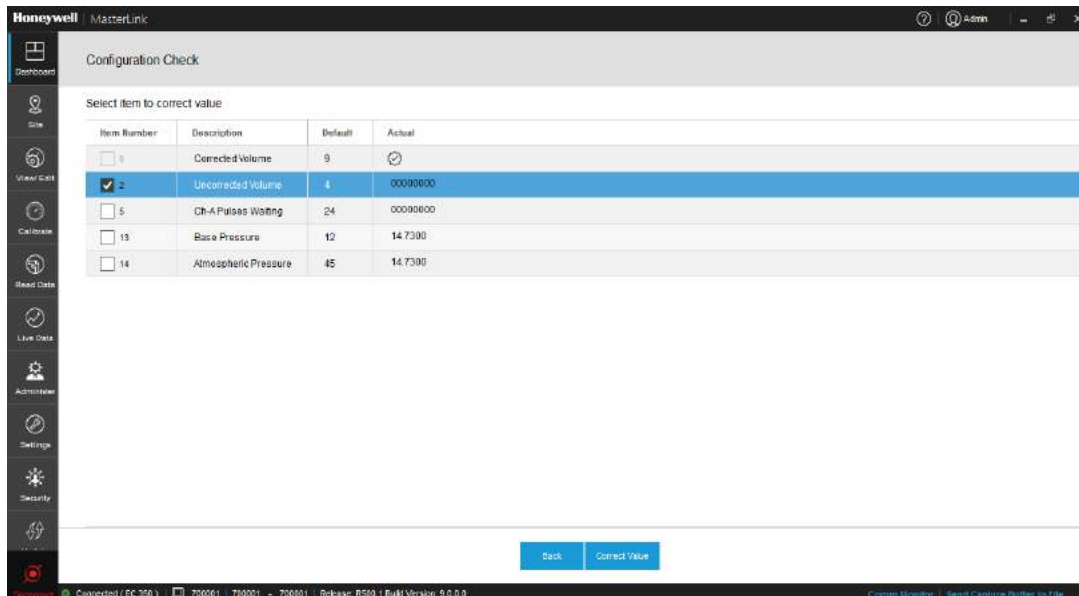
Print Destination: Adobe PDF Back Preview Print

Disconnected Connected (EC 350) ec350site 00000000 - 00000000 Release: R500.1 Build Version: 9.2.3.0 Comm Monitor | Send Capture Buffer to File

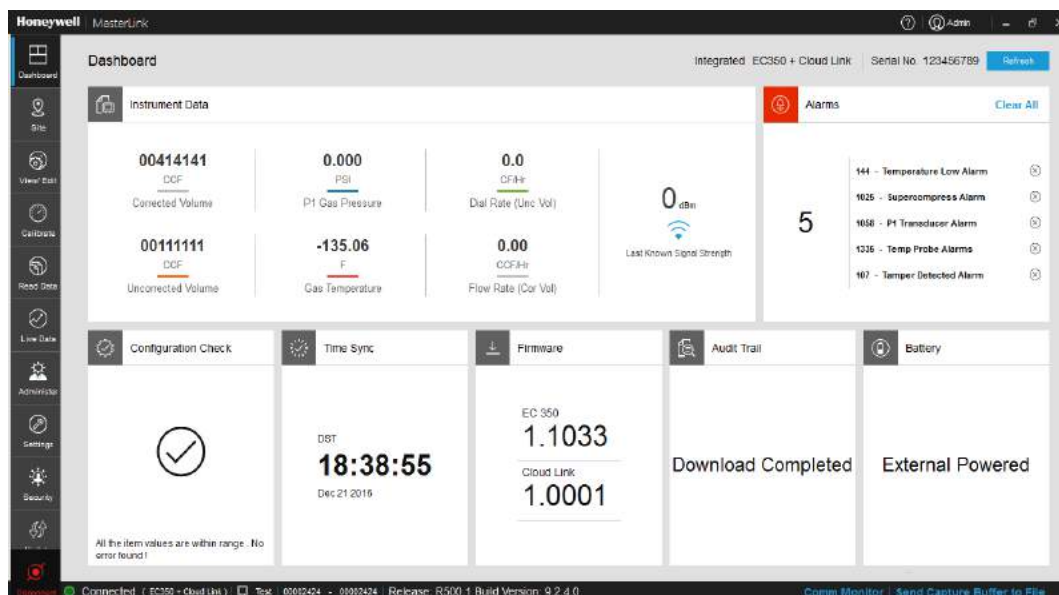
Refer [Auto Download Settings](#) page for more details.

4.3.4 Configuration Check

After connecting to the instrument, application compares values of items defined in the template with actual values in the instrument and reports the status of Config check widget on Dashboard. User can correct the values from the drill-down screen.



When all the values are corrected, the Config Check widget reports status as 'All Items found are within range'.

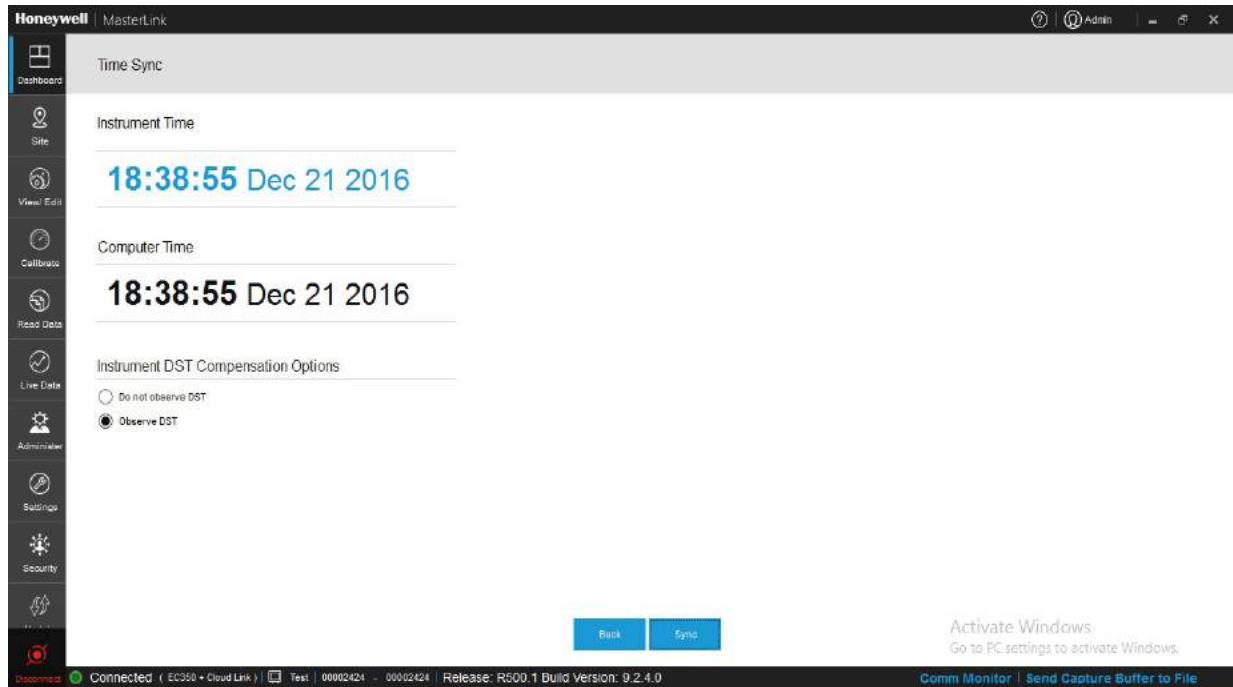


Read more: [Item Template Configuration](#)

4.3.5 Time Sync

'Time Sync' page provides a user configurable option to enable/disable auto time synchronization of the connected device with your PC.

Alternatively, time can be synchronized manually by clicking on **Sync**.

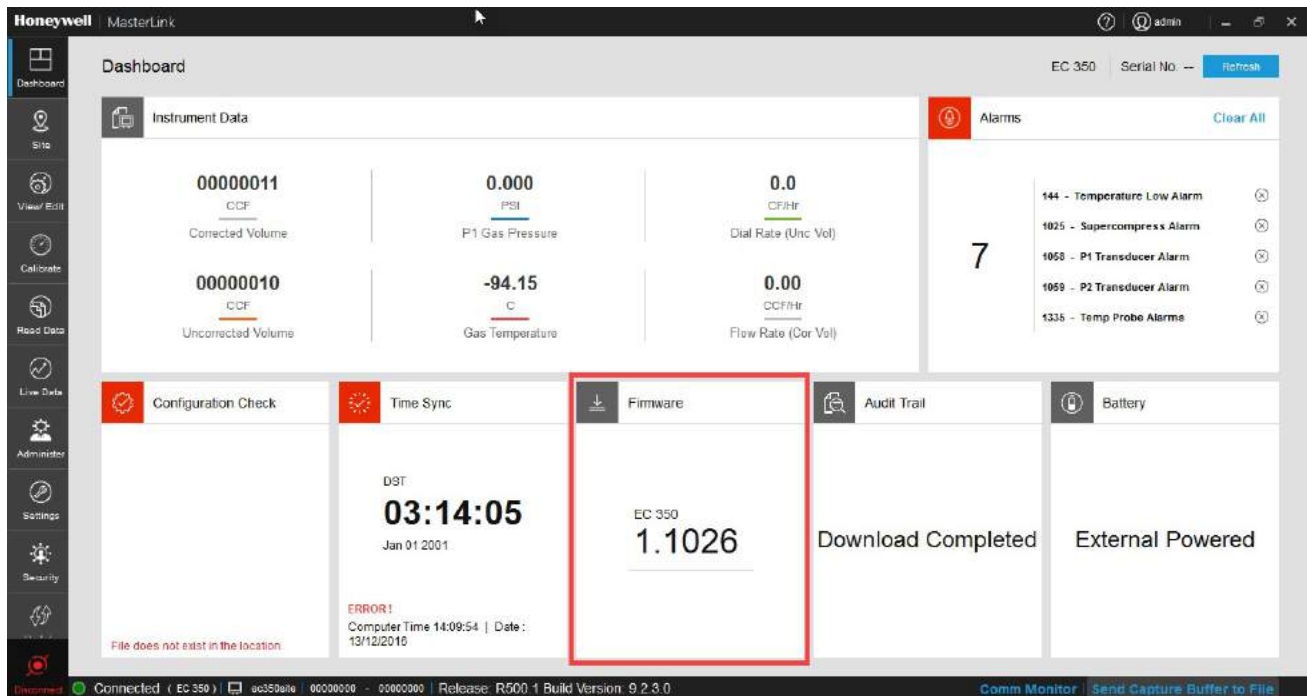


Time difference trigger point is taken into account when application reports time synchronization status.

Refer [Time Sync Properties](#) page for more details.

4.3.6 Firmware Update

Dashboard reports the current firmware revision/version(s) loaded in the instrument(s).



Firmware versions can be upgraded using the firmware drill down screen.

Step	Status
Validate FW file	
Send Firmware	
Validate Firmware	
Sync date and time	

The **Update** screen consists of three tabs:

- EC 350 Firmware Upgrade
- Cloud Link 4G Modem
- Certificate

The current firmware version details are displayed on the relevant update screen. The firmware file to be used can be browsed and version of the firmware to be upgraded is displayed under 'Selected Firmware Details' section.

Browse and select the required firmware file to be uploaded and observe application displays the information of firmware file selected under 'Selected Firmware Details' section.

The new firmware is transferred to the instrument and then installed.

Note: MasterLink Software Application R500 Application (Windows & Mobile) supports firmware upgrade to the EC 350 and Cloud Link 4G Modem, only if the devices have the following firmware versions:

Cloud Link 4G Modem: 1.0001

EC 350: 1.1032

It is not recommended to perform a firmware upgrade, unless the devices are running on the versions mentioned above.

4.3.7 Audit Trail

As soon as you connect an instrument to MasterLink Software Applications, Audit Trail data from the instrument is automatically downloaded.

The screenshot displays the Honeywell MasterLink software interface. The left sidebar contains navigation icons for Site, View/Edit, Calibrate, Read Data (highlighted), Live Data, Administrator, Settings, Security, and Update. The main window is titled 'Read Data' and includes a sub-menu with 'Item File', 'Audit Trail' (selected), 'Alarm Logs', 'Event Logs', 'Diagnostic Logs', 'Cellular Logs', 'Shortlist', and 'Activity Log'. Below the sub-menu, the 'Audit Trail Report' is shown. It includes a 'Report Name' of 'Audit Trail Report' and 'Report Selections' of '1 site', 'From 2016-12-10 07:15:00 To 2016-12-13 14:32:02'. There are dropdowns for 'Site info' (00000000.00000000) and 'Log #' (1), with a 'View' button. Below this, the report details are shown: 'Site ID: 0 0 Log1', 'Site Name: ec350site', and 'Site Location: hyd'. A table follows with 12 columns: Log Date and Time, Incremental Cor Vol (CCF), Incremental Unc Vol (CCF), P1 Interval Avg Press (PSI-G), Interval Avg Gas Temp (C), Battery Voltage Reading (VOLTS), Corrected Volume (CCF), Uncorrected Volume (CCF), P1 Gas Pressure (PSI-G), Gas Temperature (C), Case Temperature (C), and Battery Low Volt Limit (VOLTS). The table contains one data row for '12/10/2016 7:15:00 AM'. At the bottom, there is a 'Print Destination' dropdown set to 'Adobe PDF' and buttons for 'Back', 'Preview', 'Print', and 'Export CSD'. The status bar at the very bottom shows 'Disconnected', 'Connected (EC 350)', 'ec350site', '00000000 - 00000000', 'Release: R500.1 Build Version: 9.2.3.0', 'Comm Monitor', and 'Send Capture Buffer to File'.

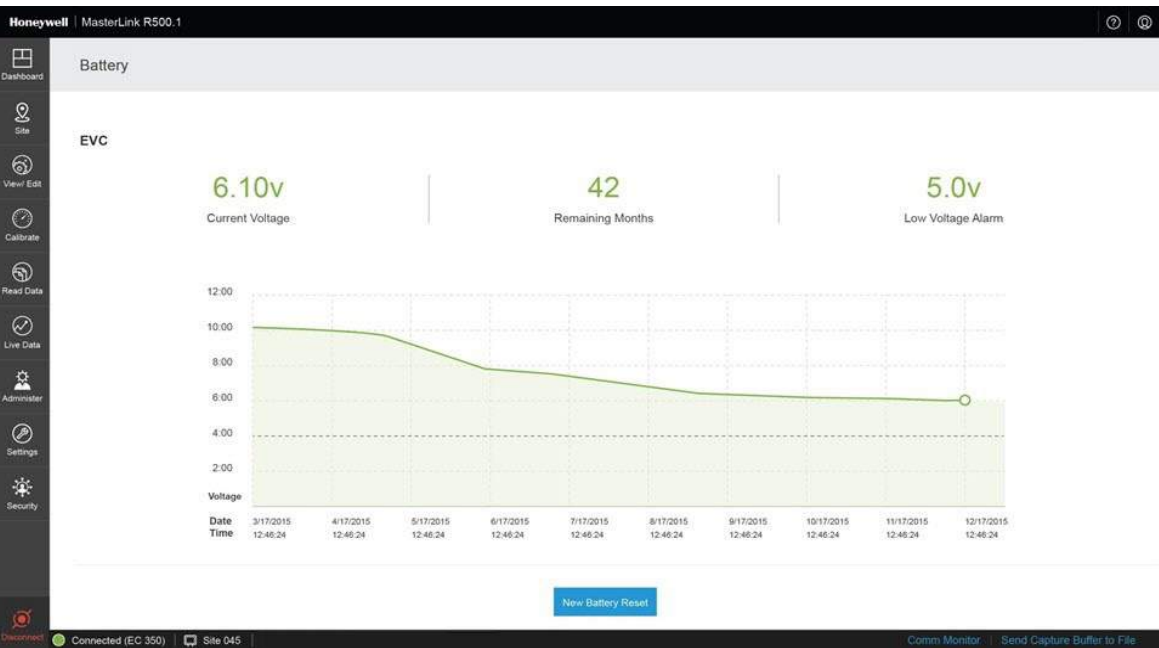
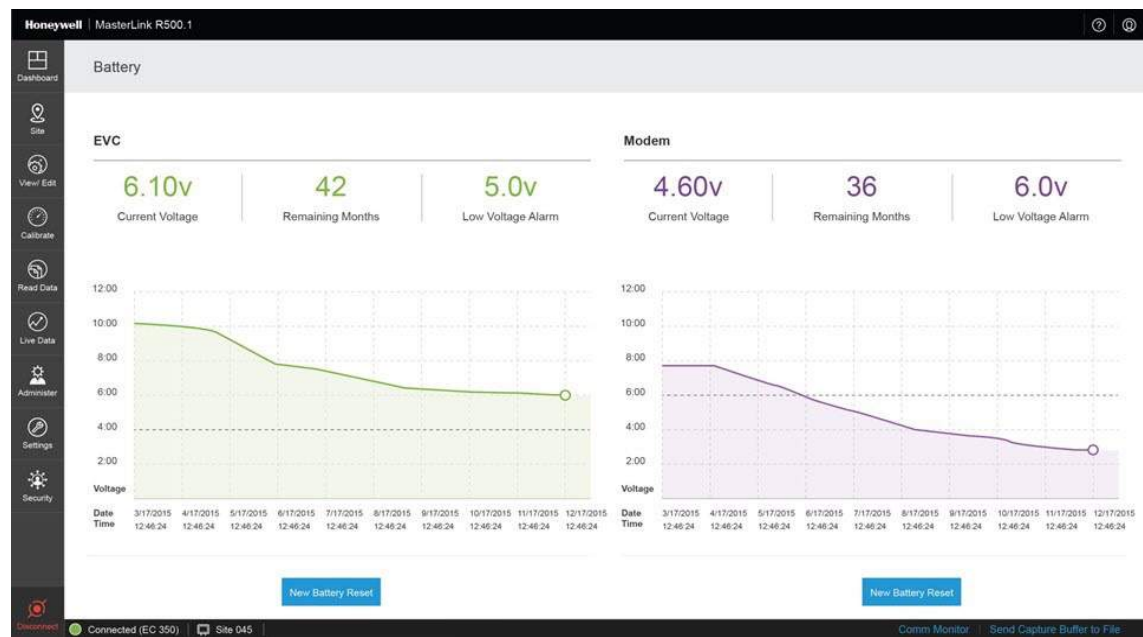
Log Date and Time	Incremental Cor Vol (CCF)	Incremental Unc Vol (CCF)	P1 Interval Avg Press (PSI-G)	Interval Avg Gas Temp (C)	Battery Voltage Reading (VOLTS)	Corrected Volume (CCF)	Uncorrected Volume (CCF)	P1 Gas Pressure (PSI-G)	Gas Temperature (C)	Case Temperature (C)	Battery Low Volt Limit (VOLTS)
12/10/2016 7:15:00 AM	0	0	.000	-94.24	3.091	9	10	.000	-94.25	22.11	4.600

Refer [Auto Download Settings](#) for more details.

4.3.8 Battery

While connecting to the site, application reads the type of power source (Battery or External). If battery powered, voltage is displayed on Dashboard.

Dashboard battery drill down is not allowed if the site is externally powered. However, if the site is battery powered the Dashboard drill down plots the battery voltage against time.

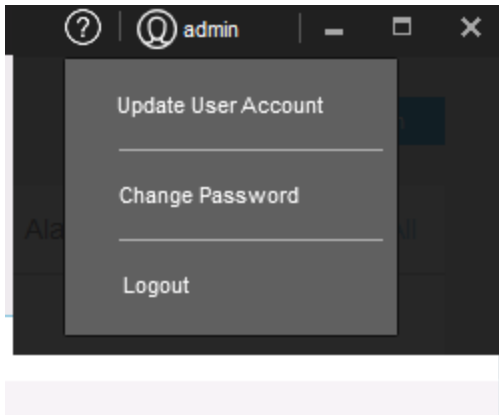


Note: For integrated EC 350 power source type is displayed based on EVC but not on MasterLink Software Application R500.1.

4.3.9 Update User Account

If privileges associated with user role are modified, then the respective user account needs to be updated with a new passkey shared by administrator.

Click on username and select **Update User Account**.



The **Update User Account** pop-up appears.

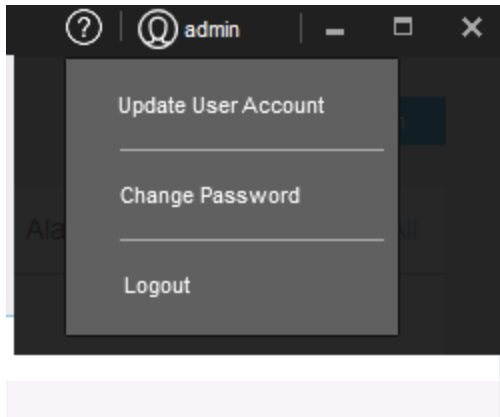
A screenshot of a 'Update User Account' pop-up window. The window has a dark grey title bar with the text 'Update User Account' and a close button (X). The main content area is white and contains three input fields. The first field is labeled 'Username' and contains the text 'Admin'. The second field is labeled 'Current Password' and contains a series of 'X' characters. The third field is labeled 'Key' and contains the text 'Key', with a blue button containing three dots to its right. At the bottom of the form, there are two blue buttons: 'Update' and 'Close'.

Update user account using the new key sent by the administrator.

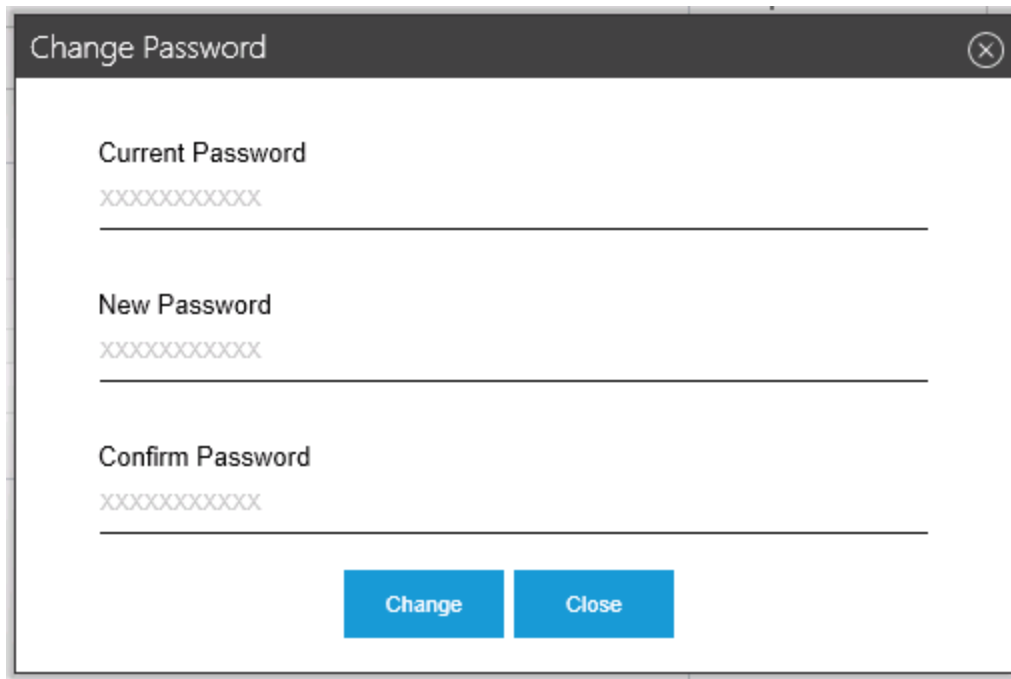
4.3.10 Change Password

Password of an existing user can be changed using the Change Password option.

Click on user-name and select **Change Password**.



The **Change Password** pop-up appears.

A screenshot of a 'Change Password' pop-up window. The window has a title bar with the text 'Change Password' and a close button (X). Inside the window, there are three input fields, each with a label and a placeholder text 'XXXXXXXXXX': 'Current Password', 'New Password', and 'Confirm Password'. At the bottom of the window, there are two blue buttons: 'Change' and 'Close'.

Type current password, and then the new password. You also need to confirm your new password by typing it again.

After you finish making the required changes, click **Change** to save the changes.

4.4 View and Edit

This tab has the functionalities performing various interactions with device such as read/write item, read item file etc.

Related topics:

[Configure by Item](#)

[Configure by Group](#)

[Send Item File](#)

[Manage Logging Configuration](#)

[Manage User Table](#)

[Manage Shortlist](#)

4.4.1 Configure by Group

MasterLink Software Application must be connected to an instrument for this function to work. 'Configure by Group' tab displays groups categorized by items corresponding to connected instrument.

Instrument items (which vary per type of instrument) can be grouped by function. The 'Configure by Group' tab displays the item values that apply to the type of connected instrument after grouping them by function. For example, all items related to pressure calibration are displayed on one screen.

When connected to an instrument, you can click on the **Read** button to read item values from the connected instrument.

To change item values:

1. Click on the desired function group (panel on left) to see the group items (panel on right).
2. Select an item by clicking the check box next to it.
3. Enter a value for the selected item number, and click on **Write** button.

The screenshot shows the Honeywell MasterLink software interface. The left sidebar is titled 'Volume & Energy' and lists various function groups. The main panel is titled 'View/ Edit' and shows a table of items. The table has columns for Item Number, Description, Value, and Unit. Item 600, 'Corrected Volume', is selected. Callout boxes point to the 'Read Item' and 'Write Item' buttons, explaining their functions.

Item Number	Description	Value	Unit
<input checked="" type="checkbox"/> 600	Corrected Volume	00000011	CCF
<input type="checkbox"/> 602	Uncorrected Volume	00000010	CCF
<input type="checkbox"/> 113	Hi Res Cor Vol	11.0000	CCF
<input type="checkbox"/> 692	Hi Res Unc Vol	0.0000	CCF
<input type="checkbox"/> 690	Cor Volume Units	CCF	—
<input type="checkbox"/> 696	Cor Vol # of Digits	8 Digits	—
<input type="checkbox"/> 692	Unc Volume Units	CCF	—
<input type="checkbox"/> 697	Unc Vol # of Digits	8 Digits	—
<input type="checkbox"/> 698	Meter Index Rate	10 CF	—
<input type="checkbox"/> 114	Meter Scaling Factor	1.000000	—
<input type="checkbox"/> 433	Volume Input Mode	LT-JMS/Instrument Drive	—
<input type="checkbox"/> 432	Meter Model	Other	—
<input type="checkbox"/> 439	Meter Displacement (CF)	1.000000	CF/rev
<input type="checkbox"/> 434	Daily Backup Volume	00000000	CCF

Read item values from the connected device

Write item values to the connected device

4.4.2 Configure by Item

MasterLink Software Application must be connected to an instrument for this function to work as different instruments have different items and groups categorized. 'Configure by Item' tab displays all items corresponding to connected instrument and by default, all items are sorted by item number.

An item can be searched with Item number or description. The check box must be checked in order to read/write value(s) of any item.

To change item values:

1. Select an item by clicking on the check box next to it.
2. Enter a value for the item number.
3. Click **Write Item** after making the changes. This will write the new item value to the connected instrument.

The screenshot shows the Honeywell MasterLink software interface. The 'View/ Edit' tab is active, displaying a table of instrument items. The table has columns for Item Number, Description, Value, and Unit. A search bar is located at the top right. Two callout boxes highlight the 'Read Item' and 'Write Item' buttons. The 'Read Item' button is labeled 'Read item values from the connected device' and the 'Write Item' button is labeled 'Write item values to the connected device'.

	Item Number	Description	Value	Unit
<input checked="" type="checkbox"/>	000	Corrected Volume	00000012	CCF
<input type="checkbox"/>	002	Uncorrected Volume	00000010	CCF
<input type="checkbox"/>	005	Ch-A Pulses Waiting		—
<input type="checkbox"/>	006	Ch-B Pulses Waiting		—
<input type="checkbox"/>	007	Ch-C Pulses Waiting		—
<input type="checkbox"/>	008	P1 Gas Pressure	0.000	PSI
<input type="checkbox"/>	010	P1 High Alarm Limit	1422335.	PSI
<input type="checkbox"/>	011	P1 Low Alarm Limit	-71.117	PSI
<input type="checkbox"/>	012	P1 Cal Atmos Pressure		PSI
<input type="checkbox"/>	013	Base Pressure	1234.000	PSI
<input type="checkbox"/>	014	Atmospheric Pressure	14.6960	PSI
<input type="checkbox"/>	015	Press used at P1-Zero		PSI
<input type="checkbox"/>	016	Pressure at P1-Zero		PSI

Sliding the mouse over the column divider until a cross is displayed, then dragging it to the desired width can resize the column widths. Use the up/down arrows or across arrows for full viewing of all data fields.

Note: Selecting a check box against an item after modifying the search criteria would refresh the previous selections.

Click on **Advance Options** and select **Raw Item Access** to modify the value of an item.

The screenshot shows the Honeywell MasterLink software interface. The top bar includes the Honeywell logo, the title 'MasterLink', and a user profile 'Admin'. A sidebar on the left contains navigation icons for Dashboard, Site, View/Edit (active), Calibrate, Read Data, Live Data, Administer, Settings, Security, and a power icon. The main area is titled 'View/Edit' and contains a navigation bar with links: 'Configure by Group', 'Configure by Item' (selected), 'Send Item File', 'Logging Configuration', 'Manage User Table', and 'Manage Shortlist'. A search bar on the right says 'Search item by number or description'. Below this is a table of parameters:

	Item Number	Description	Value	Unit
<input type="checkbox"/>	111	Temperature Factor Mode	Fixed	----
<input type="checkbox"/>	112	P1 Transducer Type	Gauge	----
<input type="checkbox"/>	113	Hi Res Cor Vol	387.7509	CF
<input type="checkbox"/>	114	Meter Scaling Factor	1.000000	----
<input type="checkbox"/>	116	Squared Supercompress	0.9999	----
<input type="checkbox"/>	118	Reference Number 1		----
<input type="checkbox"/>	119	Reference Number 2		----
<input type="checkbox"/>	120	Calibration Date P1 Press	1/1/0001	MM-DD-YY
<input type="checkbox"/>	121	Calibration Date Temp	1/1/0001	MM-DD-YY
<input type="checkbox"/>	122	Firmware Version	1.1102	----
<input type="checkbox"/>	127	Instrument Type Code		----
<input type="checkbox"/>	130	Scroll List Item 1		----

On the right side of the table, there are buttons: 'Read Item', 'Write Item', and 'Advance Options'. The 'Advance Options' button is expanded, showing 'Raw Item Access' and 'Shut Down'.

At the bottom of the window, a status bar shows: 'Disconnected' (red icon), 'Connected (EC350)' (green icon), 'EC350', '00000000 - 00000000', 'Release: R500.1 Build Version: 9.2.3.0', 'Comm Monitor', and 'Send Capture Buffer to File'.

Search for a particular item either by number or description.

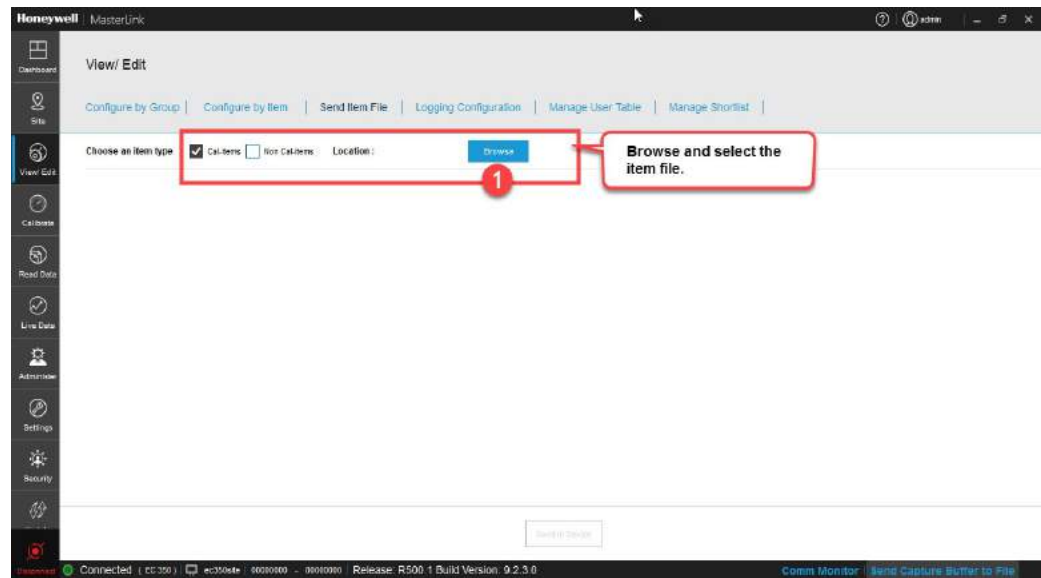
This screenshot shows the same Honeywell MasterLink interface as the previous one, but with a 'Raw Item Access' dialog box open over the table. The dialog box has a title bar with a close button (X). It contains two input fields: 'Item Number' with the value '114' and 'Value' with the value '2'. Below these fields are two buttons: 'Read Item' and 'Write Item'.

Clicking on Shut down will shut down the device.

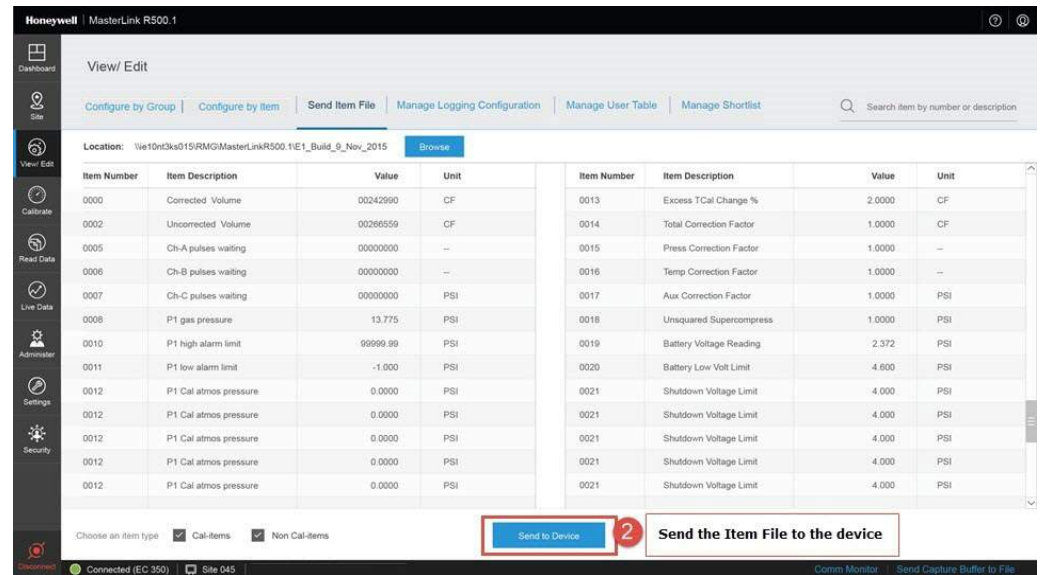
4.4.3 Send Item File

An Item File stores the current instrument's item code values on your computer in a file. You can configure different items corresponding to an instrument in an 'Item File' and then send it to the device.

Click **Browse** and select the item file. (.IE3 for EC 350, .ICL for Cloud Link 4G Modem, .ECL for EC 350 + Cloud Link 4G Modem)



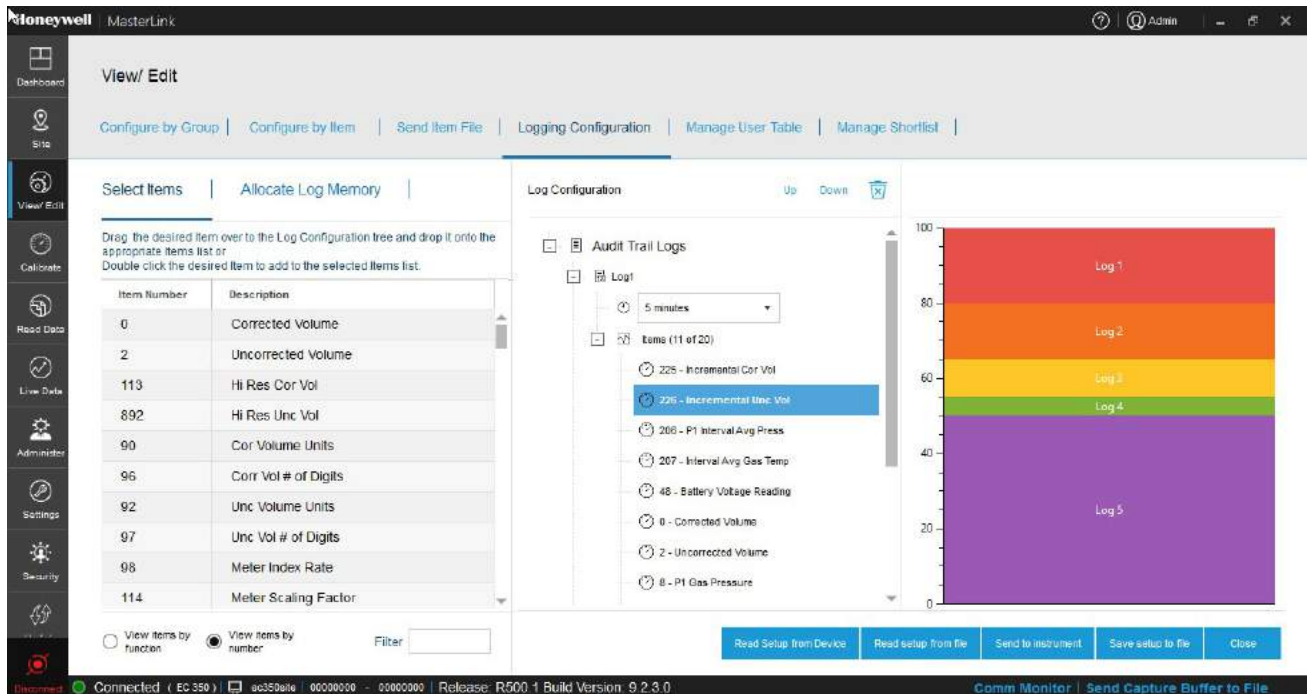
View the values configured for different item numbers.



Click **Send to Device** to send the Item File to the connected field instrument.

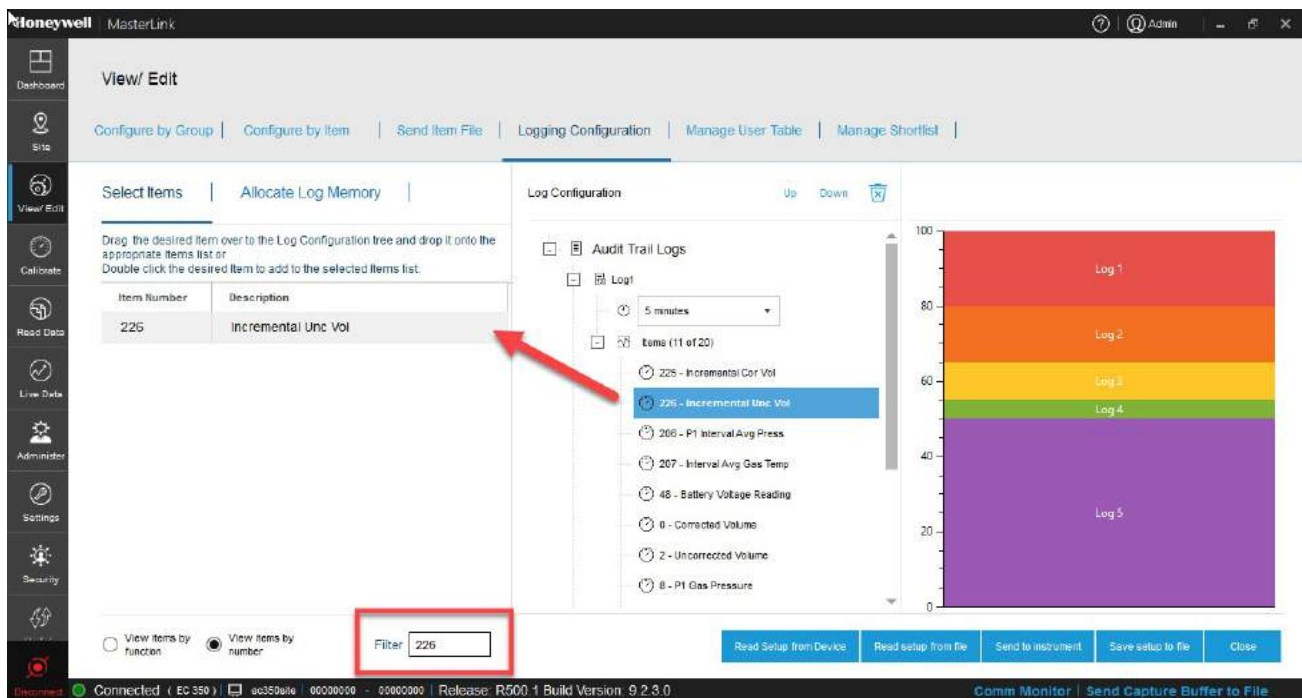
4.4.4 Logging Configuration

Using MasterLink Software Application software, an instrument can be configured to contain as many as 5 independent logs, each with its own collection of item values and collection (sample) frequency. Each log can be configured to collect values for up to 20 items.




View items by number sorts all items supported by the connected instrument. **View items by function** sorts all items related to the function / group. Users can also click on the headers (item number and description) to sort the list of item numbers. Filter text-box can be used to search item by number or description. Time interval displayed in the 'Log Configuration' tree can be right clicked to configure the period at which log records are recorded.

From the 'Select Items' tab, drag and drop or double click the desired items from the *Select Items list* over to the *log configuration tree*.

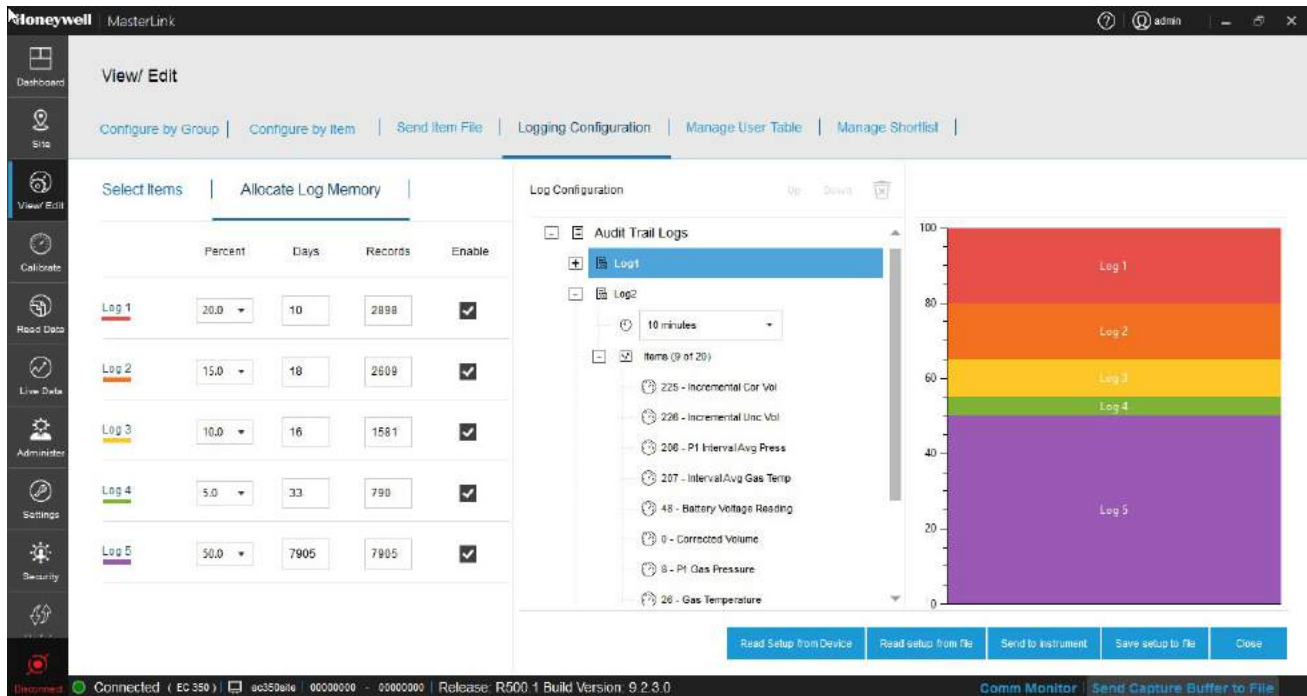


The order of the items in the Log Configuration list determines the order in which the values are stored and thus the order in which they will later appear in a report. Items in the list can be moved up and down to change the order.

The selected items from a log can be removed by clicking 

The configuration can be saved for future references to a configuration file (*.cnfg) with the **Save setup to file** button. It can later be retrieved with the **Read setup from file** button. Only *.cnfg files can be read; item files (*.ie3) are not compatible.

In the 'Allocate log memory' tab, configure the percentage of available memory which can be allocated to each log.



Note: The sum total of memory allocated for all logs must be equal to 100%.

The consequence of a particular allocation setting is reflected in the number of day's worth of data as well as the number of records that can be written before overwriting will occur. The smaller a log's allocation, the less data it will be able to store. When the limit is reached, the oldest records will be overwritten with the newer ones.

Note: A log's interval setting will impact days, but not record numbers.

The Enable check-boxes may be used to suspend data collection for one or more logs. A log's existing records will not be affected when the log is disabled.

Ensure that the device is connected to MasterLink Software Application. Click **Send to Instrument** to push the log configuration to the device. A few seconds will be required for the transfer. A window should appear indicating 'Successfully Configured'.

Click **Read setup from Device** to read logging configuration settings from the connected instrument.

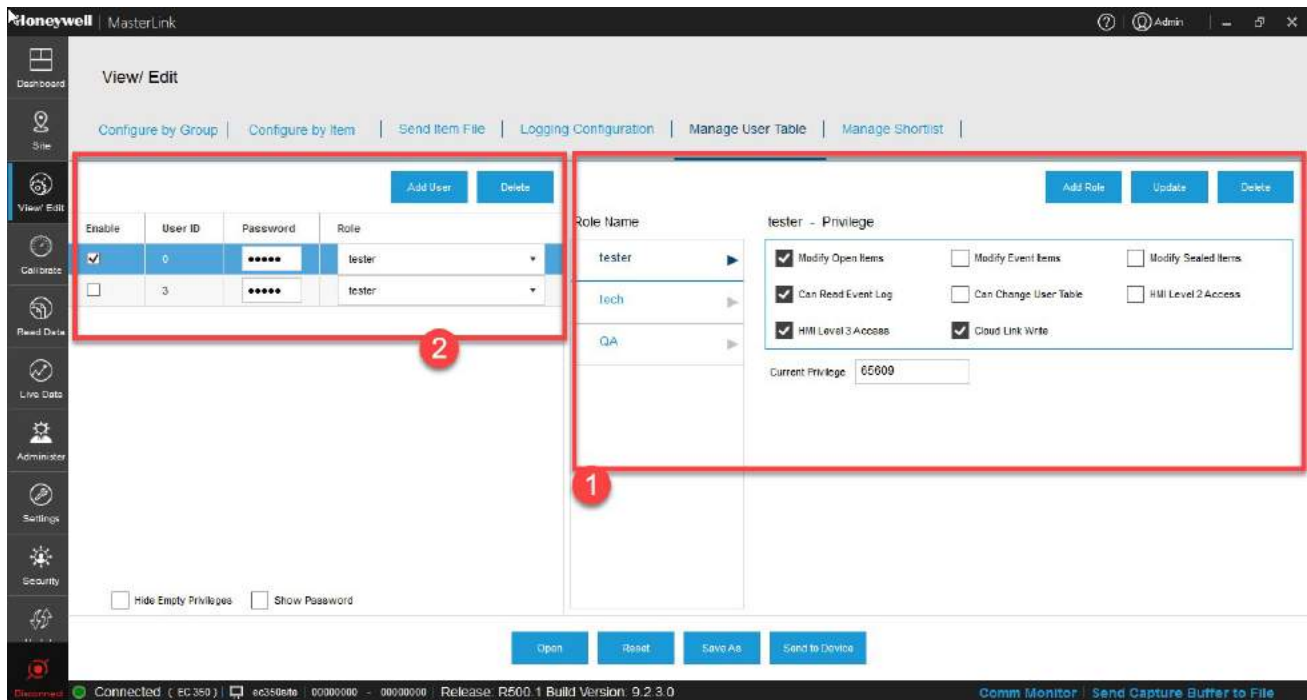
Attention: When you change the log configuration by modifying the memory allocation, all existing logs will be erased.

Attention: It is recommended to save the item file and log configuration file before changing the memory allocation of the logs.

4.4.5 Manage User Table

Access to an instrument can be controlled by defining users and assigning them Passcodes with defined privileges. Start by creating a role, then assign the role to the user and define Passcode.

Click on **Open** and load an existing saved .UTE (Manage User Table) file.



To configure a user table:

1. Start by creating a role. To create a role, click **Add Role**. The **Add New Role** pop-up window appears. assign a name to the role, and then assign user privileges. Click **Add** to complete.

Based on the privileges assigned to the role, the value of the privilege changes or vice-versa.

2. Click the check box under privileges to assign permissions to the role.
3. After a role is created, click **Add User** to create a new user.
4. After updating the privileges, click **Update** to save the changes.

The following privileges can be granted:

- Modify Open Items
- Modify Event Items
- Modify Sealed Items
- Can Read Event Log
- Can Change User table
- HMI Level 2 Access
- HMI Level 3 Access
- CloudLink Write

To add a user:

1. Click **Add User** to add new users.

2. User IDs and Passcodes are used to login to an instrument. When creating a user account, assign User ID, and a Passcode, and assign a role to the new user.

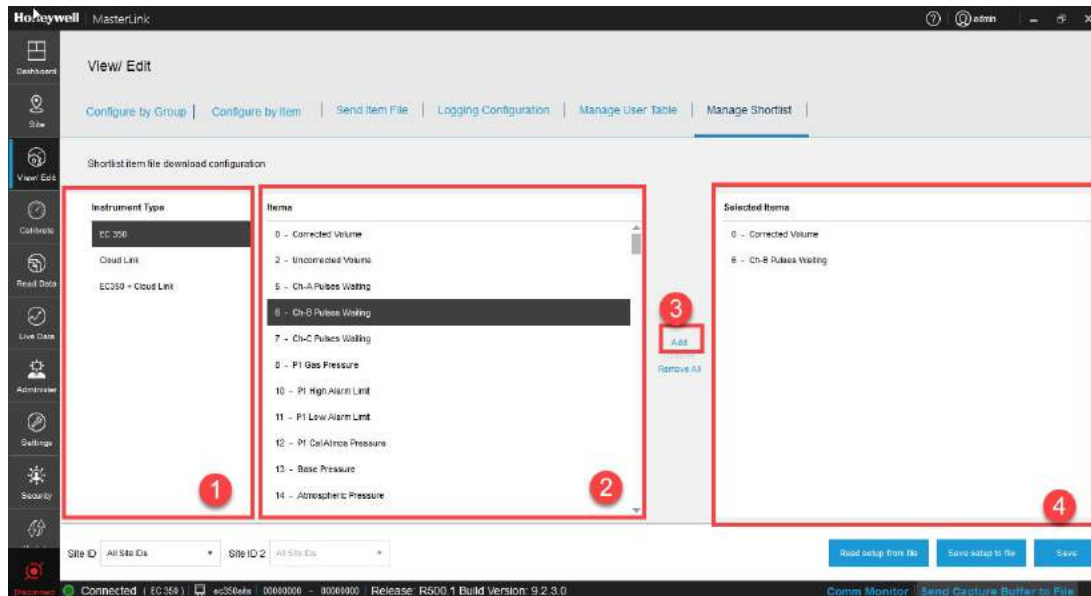
3. Valid User IDs are 0 through 99 (decimal numeric). Valid passcodes are 00000 through 99999 (decimal numeric). The Passcode must be 5 digits in length.
4. Assign a role or change the role of an existing user by selecting a different role from the **Role** drop-down.
5. Click **Add** to complete the process of adding a new user.

Click **Save As** to save a copy of the user table created. This user table is encrypted and saved in .UTE format.

Click on **Send to Device** to send a user table to the connected instrument.

4.4.6 Manage Shortlist

A Shortlist is the same as the standard Item list (stores the current instrument's item values), except that you can customize it to include required items.



To create a Shortlist:

1. Start by selecting the instrument type.
2. The items displayed in the '*Items*' column are populated based on the selected instrument type.
3. Use the **Add** button to move selections to the *Selected Items* pane.
4. Items listed in the '*Selected Items*' column will be printed using Shortlist Report.

The **Save** option, saves the Shortlist to the database.

The **Save Setup to file** option exports the shortlist.

Note: By default, instrument specific short lists are created (all sites). Use the Site ID 1 and Site ID 2 drop-downs to create site specific short lists. The short list files are named as <SiteID1>_<SiteID2>_ymmddhhmmss.CE3 file. Example: 44571111_44571111_161214120204

You can save and download the Shortlist as a file for later use. You can also read an existing Shortlist file.

Note: By default all shortlist files are stored in *C:\ProgramData\Honeywell\MasterLink Software Application\ShortListFiles*.

4.5 Calibrate

Related topics:

[Pressure Calibration](#)

[Temperature Calibration](#)

4.5.1 Pressure Calibration P1

This procedure is used to calibrate the pressure transducer to a pressure calibration standard.

UNDERSTANDING PRESSURE CALIBRATION:

This is a simple two-point calibration. First, calibrate pressure at a low scale pressure and then again at a high scale pressure. Each time, adjust the pressure calculated by the instrument to match the reading from your pressure standard (reference standard calibrator). Adjusting the low scale pressure is called "Zero Calibration" while adjusting the high scale pressure is called "Span Calibration." Span calibration actually uses some of the information determined from performing the zero calibration. For this reason, you will need to at least "sample" a low scale pressure before you can begin the span calibration. Sampling occurs when you indicate that the pressure is ready to be averaged.

BEFORE STARTING THE PRESSURE CALIBRATION:

Make certain that the following items have been verified for correctness:

- Pressure Calibrator
- Pressure Unit Code (unit of measure)
- Transducer Serial Number (assigned at the factory)
- Type of Transducer (gauge or absolute)

P1 Calibration table displays current Calibration pressure and two previous pressure values along with Calibration date in mm-dd-yy format. Current span Calibration pressure and two previous pressure values are also displayed.

To calibrate pressure:

1. Apply a zero reference pressure (low range) to the P1 pressure transducer of the instrument, and wait for the instrument to stabilize.
2. Click **Average Now** to apply a zero reference pressure to the instrument.

Honeywell MasterLink | Admin

Calibrate

P1 Calibration | P2 Calibration | Temperature Calibration

Pressure 1 Zero Calibration

Item Number	Description	Value	Unit
13	Base Pressure	14.6960	PSI
14	Atmospheric Pressure	1.0000	PSI
17	Calibration P1-Zero	-1.7918	PSI
18	Cal Prev-1 P1-Zero	-1.8145	PSI
19	Cal Prev-2 P1-Zero	-0.0014	PSI
20	Calibration P1-Span	0.9966	---
21	Cal Prev-1 P1-Span	0.9969	---
22	Cal Prev-2 P1-Span	1.0000	---
23	Min PCal Point Diff %	50.0000	---
24	Excess PCal Change %	2.0000	---
87	P1 Pressure Units	PSI	---
112	P1 Transducer Type	Gauge	---

Apply any 'zero reference' pressure to the instrument's pressure input and wait for the instrument to stabilize before pressing the AVERAGE NOW button. After the averaged pressure is displayed, press the NEXT button to enter a new ZERO cal point.

Live Pressure: 0.95064 PSI

Average Now Change

Done Open Calibration

Connected (EC350) | EC350 | 00000000 - 00000000 | Release: R500.1 Build Version: 9.2.3.0 | Comm Monitor | Send Capture Buffer to File

Honeywell MasterLink | admin

Calibrate

P1 Calibration | P2 Calibration | Temperature Calibration

Pressure 1 Zero Calibration

Item Number	Description	Value	Unit
13	Base Pressure	1234.000	PSI
14	Atmospheric Pressure	14.6960	PSI
17	Calibration P1-Zero	0.0000	PSI
18	Cal Prev-1 P1-Zero	0.0000	PSI
19	Cal Prev-2 P1-Zero	0.0000	PSI
20	Calibration P1-Span	1.0000	---
21	Cal Prev-1 P1-Span	1.0000	---
22	Cal Prev-2 P1-Span	1.0000	---
23	Min PCal Point Diff %	50.0000	---
24	Excess PCal Change %	25.0000	---
87	P1 Pressure Units	PSI	---
112	P1 Transducer Type	None	---

Apply any 'zero reference' pressure to the instrument's pressure input and wait for the instrument to stabilize before pressing the AVERAGE NOW button. After the averaged pressure is displayed, press the NEXT button to enter a new ZERO cal point.

Live Pressure: Averaging... PSI

Average Now Change

Please wait...

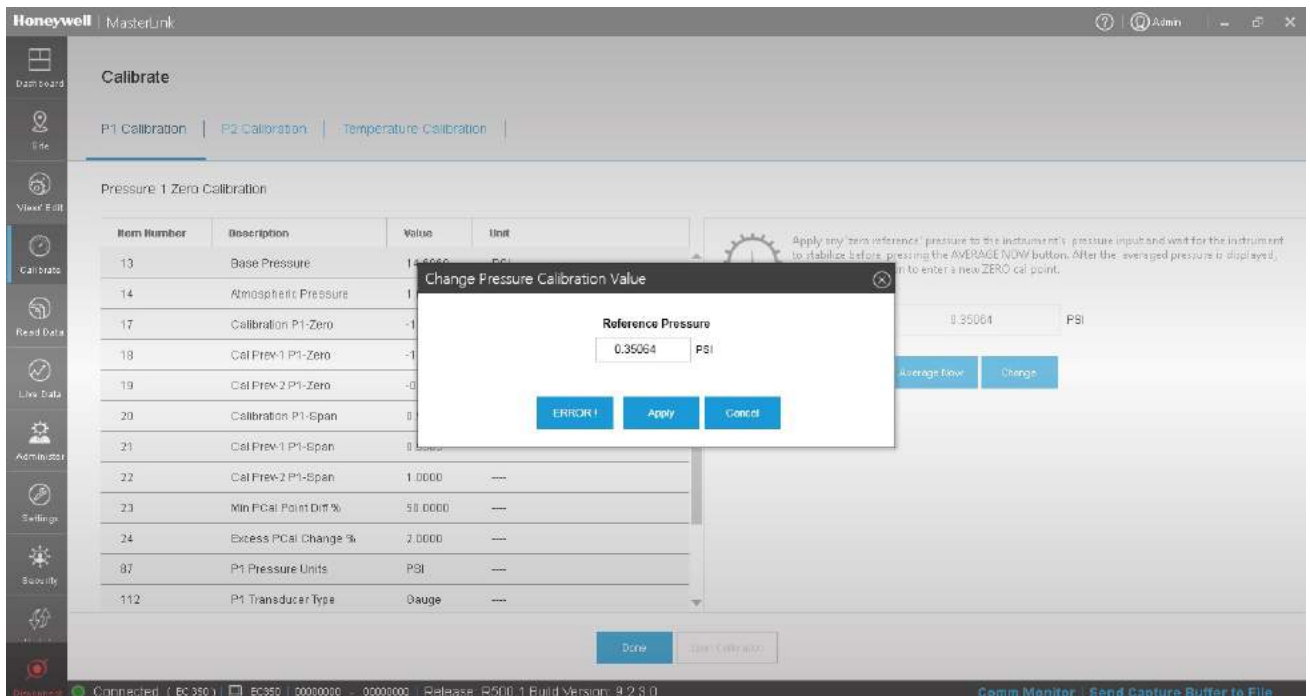
Cancel

Done Open Calibration

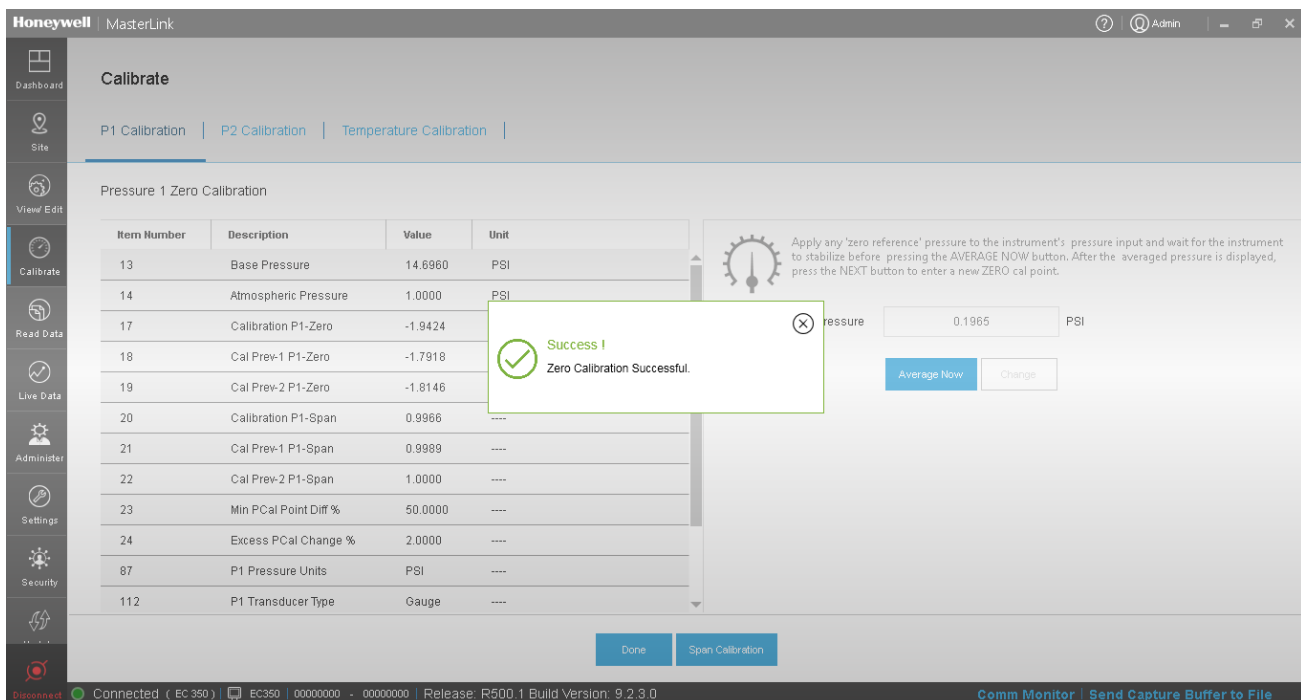
Connected (EC350) | EC350 | 00000000 - 00000000 | Release: R500.1 Build Version: 9.2.3.0 | Comm Monitor | Send Capture Buffer to File

The averaged pressure appears.

3. Click **Change** to enter a zero cal point.



4. Change the value to accurately match the zero reference pressure applied to the pressure transducer. Click **Apply**.



- Click **Span Calibration**. Apply a high pressure such that the pressure applied is at least 50% more than the zero reference pressure. Wait for the pressure reading displayed on the Pressure 1 dialog box to exceed the zero reference pressure by 50%.

Note: For example, if the zero reference pressure on a 100 PSI transducer equals 0.00 PSI, then the span reference pressure must be between 50.00 and 100.00 PSI. If the zero reference pressure on a 600 PSI transducer equals 0.00 PSI, then the span reference pressure must be between 300.00 and 600.00 PSI.

The screenshot shows the Honeywell MasterLink software interface. The left sidebar contains navigation icons for Dashboard, Site, View/Edit, Calibrate (selected), Read Data, Live Data, Administer, Settings, Security, and a power icon. The main window is titled 'Calibrate' and has tabs for 'P1 Calibration', 'P2 Calibration', and 'Temperature Calibration'. The 'P1 Calibration' tab is active, displaying a table titled 'Pressure 1 Zero Calibration'.

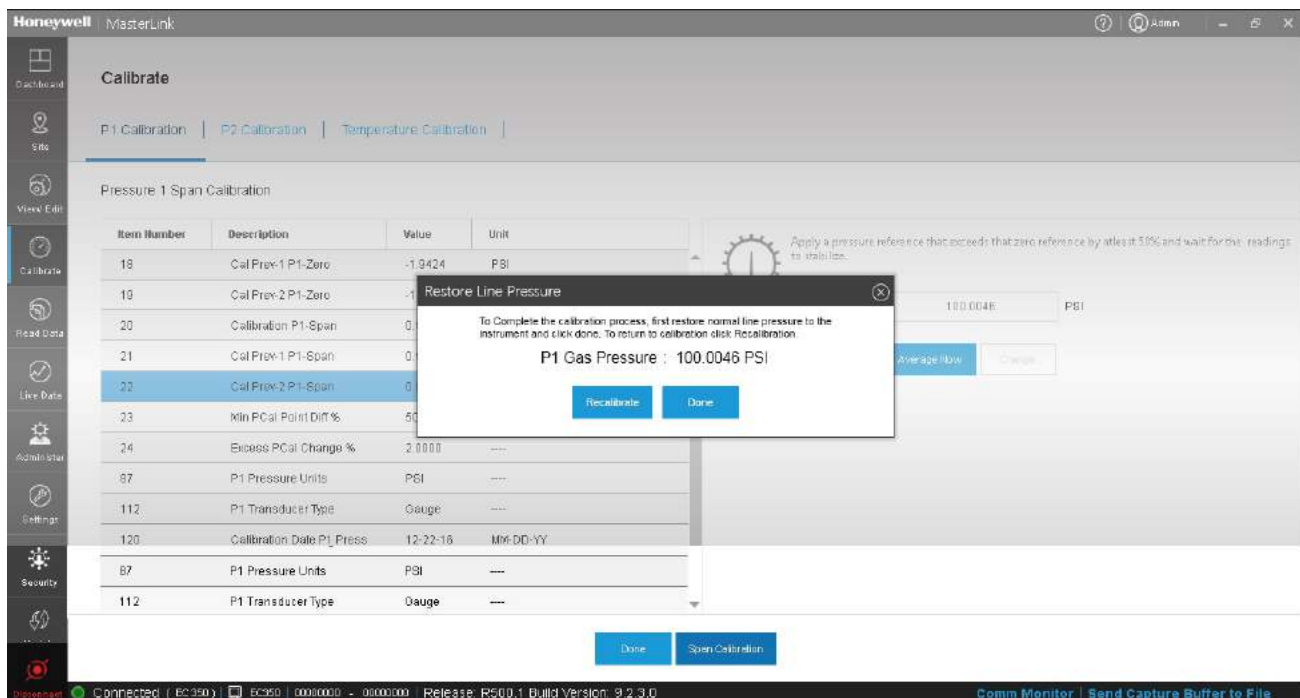
Item Number	Description	Value	Unit
13	Base Pressure	14.6960	PSI
14	Atmospheric Pressure	1.0000	PSI
17	Calibration P1-Zero	-1.9424	PSI
18	Cal Prev-1 P1-Zero	-1.7918	PSI
19	Cal Prev-2 P1-Zero	-1.8146	PSI
20	Calibration P1-Span	0.9966	----
21	Cal Prev-1 P1-Span	0.9989	----
22	Cal Prev-2 P1-Span	1.0000	----
23	Min PCal Point Diff %	50.0000	----
24	Excess PCal Change %	2.0000	----
87	P1 Pressure Units	PSI	----
112	P1 Transducer Type	Gauge	----

To the right of the table is a 'Live Pressure' dialog box. It contains a gauge icon and the text: 'Apply any 'zero reference' pressure to the instrument's pressure input and wait for the instrument to stabilize before pressing the AVERAGE NOW button. After the averaged pressure is displayed, press the NEXT button to enter a new ZERO cal point.' The 'Live Pressure' field shows '0.2053' PSI. Below the field are two buttons: 'Average Now' (highlighted in blue) and 'Change'.

At the bottom of the main window, there are two buttons: 'Done' and 'Span Calibration' (highlighted in blue). The status bar at the very bottom shows 'Disconnected' (red), 'Connected (EC350)' (green), 'EC350 00000000 - 00000000', 'Release: R500.1 Build Version: 9.2.3.0', and 'Comm Monitor | Send Capture Buffer to File'.

- Click **Apply**.

- After the pressure stabilizes, click **Average Now**. MasterLink Software Application averages the reading and displays the average pressure.



- To complete the calibration process, restore the normal line pressure to the instrument, and then click **Done**.
- For Recalibration, click **Recalibrate** and repeat the same process.

4.5.2 Pressure Calibration P2

P2 Calibration contains different calibration items. The procedure would be same as performed for P1 calibration.

Honeywell MasterLink Admin

Calibrate

P1 Calibration | **P2 Calibration** | Temperature Calibration

Pressure 2 Zero Calibration

Item Number	Description	Value	Unit
13	Base Pressure	14.6960	PSI
14	Atmospheric Pressure	1.0000	PSI
23	Min PCal Point Diff %	50.0000	----
24	Excess PCal Change %	2.0000	----
407	P2 Transducer Type	Gauge	----
408	P2 Pressure Units	PSI	----
410	Calibration Date P2 Press	12-14-16	MM-DD-YY
414	Calibration P2-Zero	-1.9972	PSI
415	Cal Prev-1 P2-Zero	-1.7918	PSI
24	Excess PCal Change %	2.0000	----
87	P1 Pressure Units	PSI	----
112	P1 Transducer Type	Gauge	----

Apply any 'zero reference' pressure to the instrument's pressure input and wait for the instrument to stabilize before pressing the AVERAGE NOW button. After the averaged pressure is displayed, press the NEXT button to enter a new ZERO cal point.

Live Pressure: PSI

Disconnected Connected (EC350) | EC350 | 00000000 - 00000000 | Release: R500.1 Build Version: 9.2.3.0 | [Comm Monitor](#) | [Send Capture Buffer to File](#)

4.5.3 Temperature Calibration

UNDERSTANDING TEMPERATURE CALIBRATION

This is a simple two-point calibration. First, calibrate the gas temperature sensor at a low scale temperature and then again at a high scale temperature. Each time, adjust the temperature calculated by the instrument to match the reading from your reference standard calibrator.

Adjusting the low scale temperature is called "Zero Calibration" while adjusting the high scale temperature is called "Span Calibration." A low temperature source, usually an ice bath (32 °F) is used to determine the Temperature Zero Calibration. A higher temperature source is used to determine the Temperature Span Calibration (gain). The default Calibration Parameters require the Span Temperature exceed the Zero Temperature by at least 10% of the instrument's temperature range.

Span calibration actually uses some of the information determined from performing the zero calibration. For this reason, you will need to at least "sample" a low scale temperature before you can begin the span calibration. Sampling occurs when you indicate that the temperature is ready to be averaged.

To calibrate temperature:

1. Insert the temperature probe of the instrument, along with an accurately calibrated thermometer into a low temperature bath or dry well, which provides the temperature zero reference. Wait for the temperature reading displayed on the Temperature Calibration dialog box to be stabilized.
2. Click **Average Now**. MasterLink Software Application averages the reading and displays the average temperature.

The screenshot shows the Honeywell MasterLink software interface. The main window is titled "Calibrate" and has three tabs: "P1 Calibration", "P2 Calibration", and "Temperature Calibration". The "Temperature Calibration" tab is active. On the left, there is a sidebar with icons for "View/ Edit", "Calibrate", "Read Data", "Live Data", "Administrator", "Settings", "Security", and "Update". The main area displays a table titled "Temperature Zero Calibration" with columns: Item Number, Description, Value, and Unit. The table contains 12 rows of calibration data. To the right of the table is a "Live Temperature" section with a thermometer icon, a text box showing "-18.39", and a unit selector set to "F". Below the text box are two buttons: "Average Now" and "Change". At the bottom of the table area are two buttons: "Done" and "Scan Calibration". The status bar at the bottom shows "Connected (EC 350)", "00000000 - 00000000", "Release: R500.1 Build Version: 9.2.3.0", and "Comm Monitor | Send Capture Buffer to File".

Item Number	Description	Value	Unit
31	Case Temperature	22.84	C
34	Base Temperature	15.56	C
35	Calibration T-Zero	-0.9719	C
36	Cal Prev-1 T-Zero	-0.9019	C
37	Cal Prev-2 T-Zero	-0.8589	C
38	Calibration T-Span	1.0000	----
39	Cal Prev-1 Temp-Span	1.0000	----
40	Cal Prev-2 Temp-Span	1.0000	----
41	Min TCal Point Diff %	10.0000	----
42	Excess TCal Change %	2.0000	----
89	Temperature Units	C	----
121	Calibration Date Temp	09-16-16	MM-DD-YY

The screenshot shows the Honeywell MasterLink Calibrate interface. A 'Please wait...' dialog box is centered over the 'Temperature Zero Calibration' table. The table contains the following data:

Item Number	Description	Value	Unit
31	Case Temperature	22.84	C
34	Bath Temperature	15.56	C
35	Calibration T-Zero	-0.9719	C
36	Cal Prev-1 T-Zero	-0.9019	C
37	Cal Prev-2 T-Zero	-0.8699	C
38	Calibration T-Span	1.0000	----
39	Cal Prev-1 Temp-Span	1.0000	----
40	Cal Prev-2 Temp-Span	1.0000	----
41	Min TCal Point Diff %	10.0000	----
42	Excess TCal Change %	2.0000	----
89	Temperature Units	C	----
121	Calibration Date Temp	09-16-16	MM-DD-YY

On the right side of the interface, there is a 'Live Temperature' section with a thermometer icon and instructions: 'Insert the temperature sensor in a low temperature calibration bath and wait for the temperature reading to stabilize before accepting or changing the temperature to match the zero reference temperature.' The 'Live Temperature' field shows 'Averaging...' and 'F'. Below it are buttons for 'Average Now' and 'Change'.

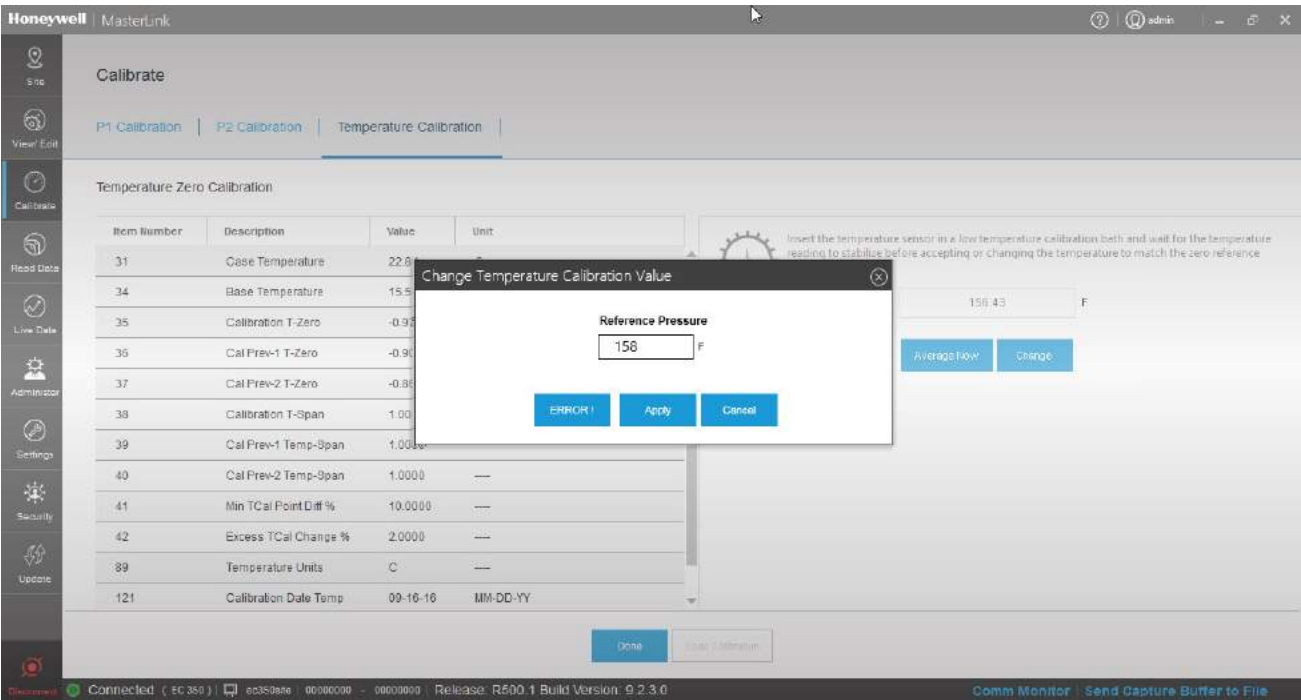
The bottom status bar shows: 'Connected (FC 350) | ec350date 00000000 - 00000000 | Release: R500.1 Build Version: 9.2.3.0 | Comm Monitor | Send Capture Buffer to File'.

This screenshot shows the same Honeywell MasterLink Calibrate interface, but the 'Please wait...' dialog box is no longer present. The 'Live Temperature' field now displays '-20' and 'F'. The 'Average Now' button is highlighted with a mouse cursor.

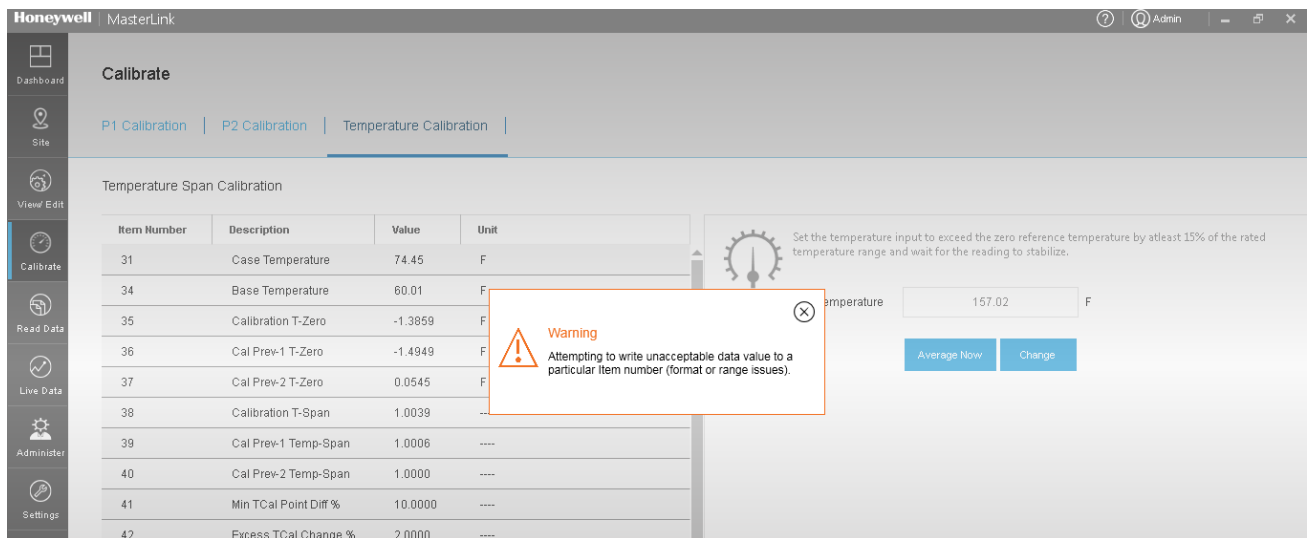
The 'Temperature Zero Calibration' table remains the same as in the previous screenshot.

The bottom status bar shows: 'Connected (FC 350) | ec350date 00000000 - 00000000 | Release: R500.1 Build Version: 9.2.3.0 | Comm Monitor | Send Capture Buffer to File'.

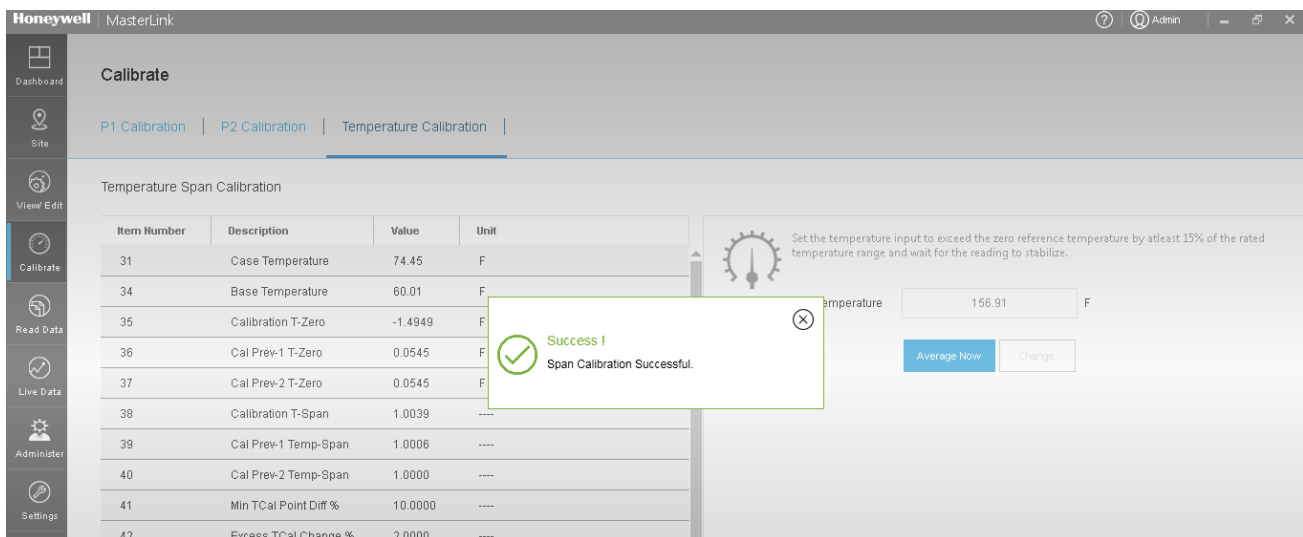
3. Click **Next** to change the value to accurately match the temperature measured by the calibrated thermometer placed in the low temperature bath. Click **Apply**.



Note: On entering incorrect values, an error message is displayed.



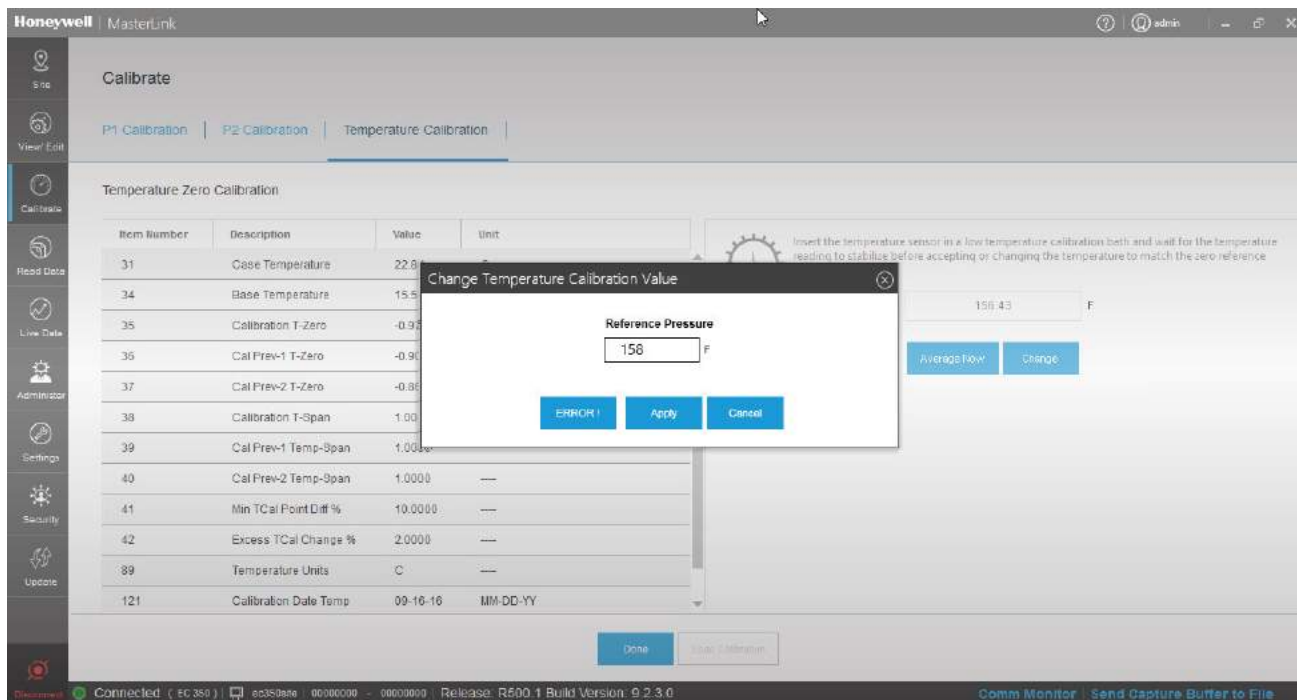
- Click **Span Calibration**. Insert the temperature probe of EC 350 and the calibrated thermometer into a high temperature bath, which provides the temperature span reference. The temperature reading displayed on the Temperature Calibration dialog box must exceed the zero reference temperature by at least 15% to proceed with span calibration.



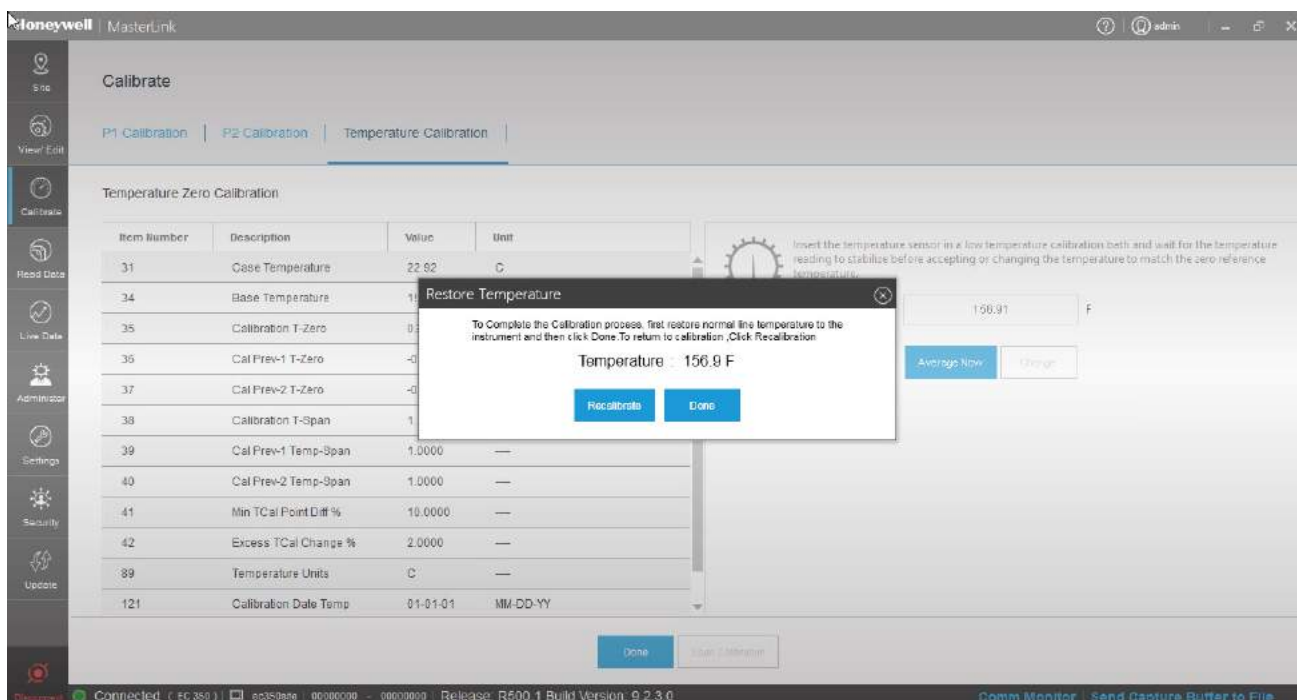
- After the reading stabilizes, click **Average Now**.

MasterLink Software Application averages the reading and displays the average temperature.

- Click **Change**. Change the value to accurately match the temperature measured by the calibrated thermometer placed in the high calibration bath. Finally click **Apply**.



- To complete the calibration process, first restore normal line temperature to the instrument, and then click **Done**.



Note: Supported temperature range: -40 °C to 70 °C

- For Recalibration, click **Recalibrate** and repeat the same process.

4.6 Read Data

The Read data functionality is now re-designed to read and report data from the same screen. Users can read the logs from the instrument and can also generate reports.

In integrated mode

- When connected to integrated EC 350 over IrDA, logs from MasterLink Software Application R500.1 cannot be downloaded.
- When connected through TCP/IP - all logs can be downloaded

In EC 350 mode

- When connected to EC 350 tabs corresponding to cellular logs and diagnostic logs are disabled.

Related topics:

[Item File](#)

[Audit Trail](#)

[Alarm Logs](#)

[Event Logs](#)

[Diagnostic Logs](#)

[Cellular Logs](#)

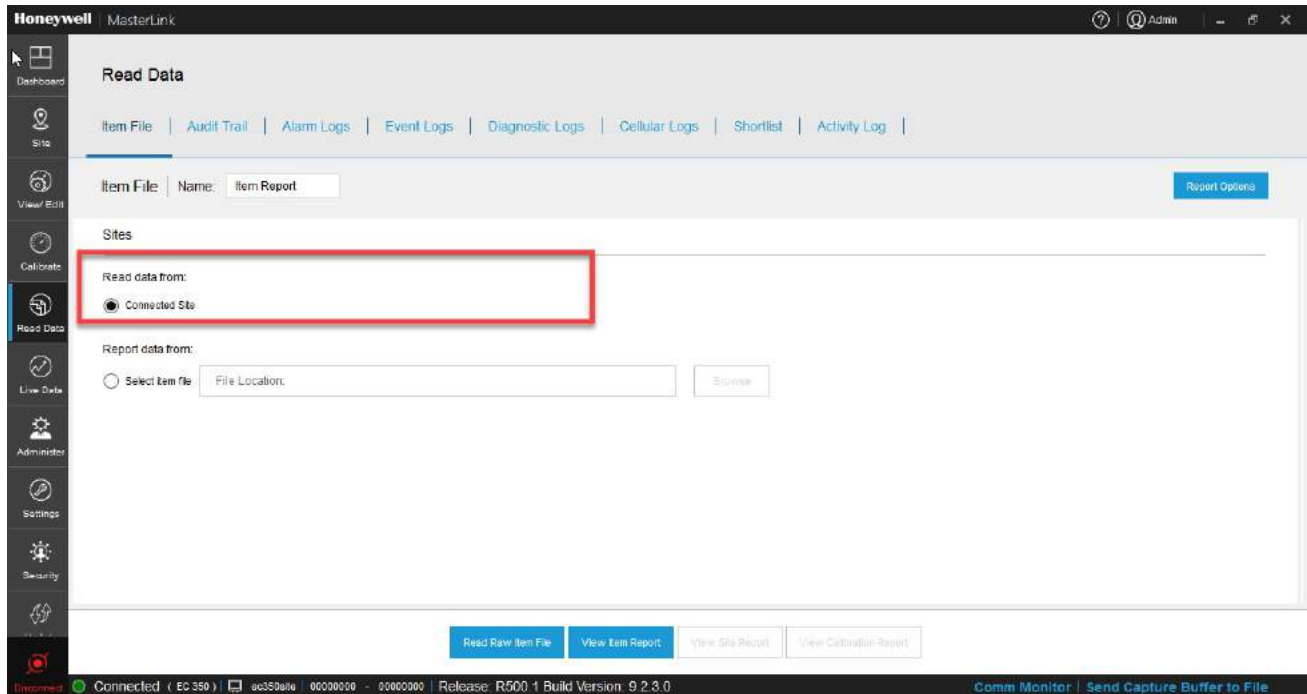
[Shortlist](#)

[Activity log](#)

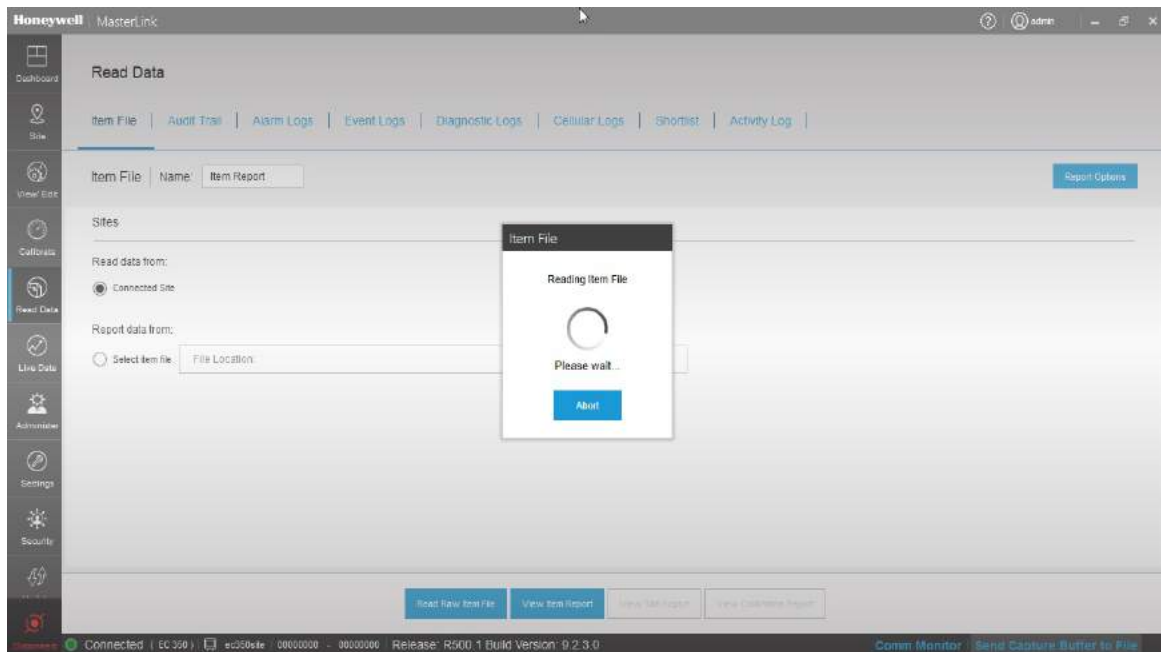
4.6.1 Item File

Use the 'Item File' tab to read the item numbers and their current values from the instrument. An Item File stores the connected site instrument's item values in a file (*.IE3 for EC 350, *.ICL for Cloud Link 4G Modem, *.ECL for EC 350 + Cloud Link 4G Modem).

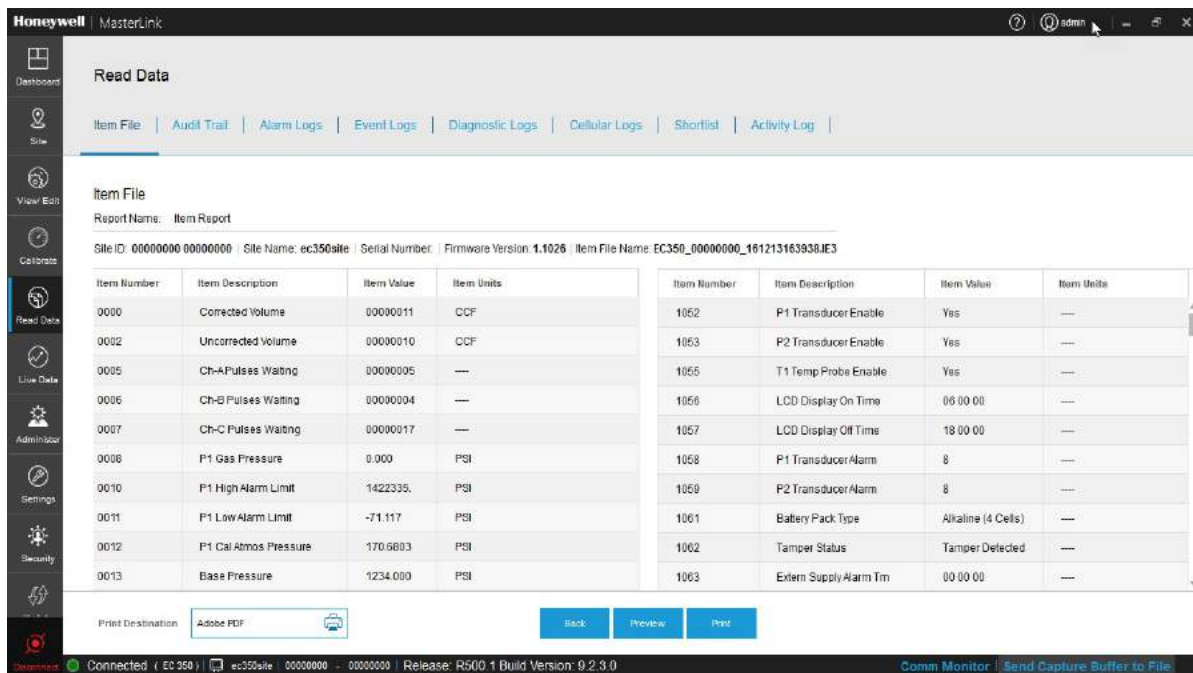
Item file can be read (online) from the connected instrument or can be viewed (offline) from a stored item file.



Click **View Item Report** to generate and preview Item report



The Item File report appears.



Export or Print the data.

Click **View Site Report** under Item File tab to generate site report.

Read Data

Item File | Audit Trail | Alarm Logs | Event Logs | Diagnostic Logs | Cellular Logs | Shortlist | Activity Log

Site Report

Report Name: Item Report

Site ID: 00000000 00000000 | Site Name: ec350site | Serial Number: "" | Firmware Version: 1.1026 | Item File Name: EC350_00000000_161213163938.IE3

Volume

Item Number	Item Description	Item Value	Item Units
0000	Corrected Volume	00000011	CCF
0002	Uncorrected Volume	00000010	CCF
0080	Cor Volume Units	CCF	---
0092	Unc Volume Units	CCF	---
0099	Cor Vol # of Digits	8 Digits	---
0097	Unc Vol # of Digits	8 Digits	---
0098	Meter Index Rate	10 CF	---
0113	Hi Res Cor Vol	11.0000	CCF

Pressure

Print Destination: Adobe PDF

Back Preview Print

Connected (EC 350) ec350site 00000000 - 00000000 Release: R500.1 Build Version: 9.2.3.0 Comm Monitor Send Capture Buffer to File

Click **View Calibration Report** under item file tab to view calibration report.

Read Data

Item File | Audit Trail | Alarm Logs | Event Logs | Diagnostic Logs | Cellular Logs | Shortlist | Activity Log

Calibration Report

Report Name: Item Report

Site ID: 00000000 00000000 | Site Name: ec350site | Serial Number: "" | Firmware Version: 1.1026 | Item File Name: EC350_00000000_161213163938.IE3

Volume

Item Number	Item Description	Item Value	Item Units
0000	Corrected Volume	00000011	CCF
0002	Uncorrected Volume	00000010	CCF
0113	Hi Res Cor Vol	11.0000	CCF

Pressure

Item Number	Item Description	Item Value	Item Units
0008	P1 Gas Pressure	0.000	PSI
0013	Base Pressure	1234.000	PSI
0014	Atmospheric Pressure	14.6950	PSI
0017	Calibration P1-Zero	0.0000	PSI

Print Destination: Adobe PDF

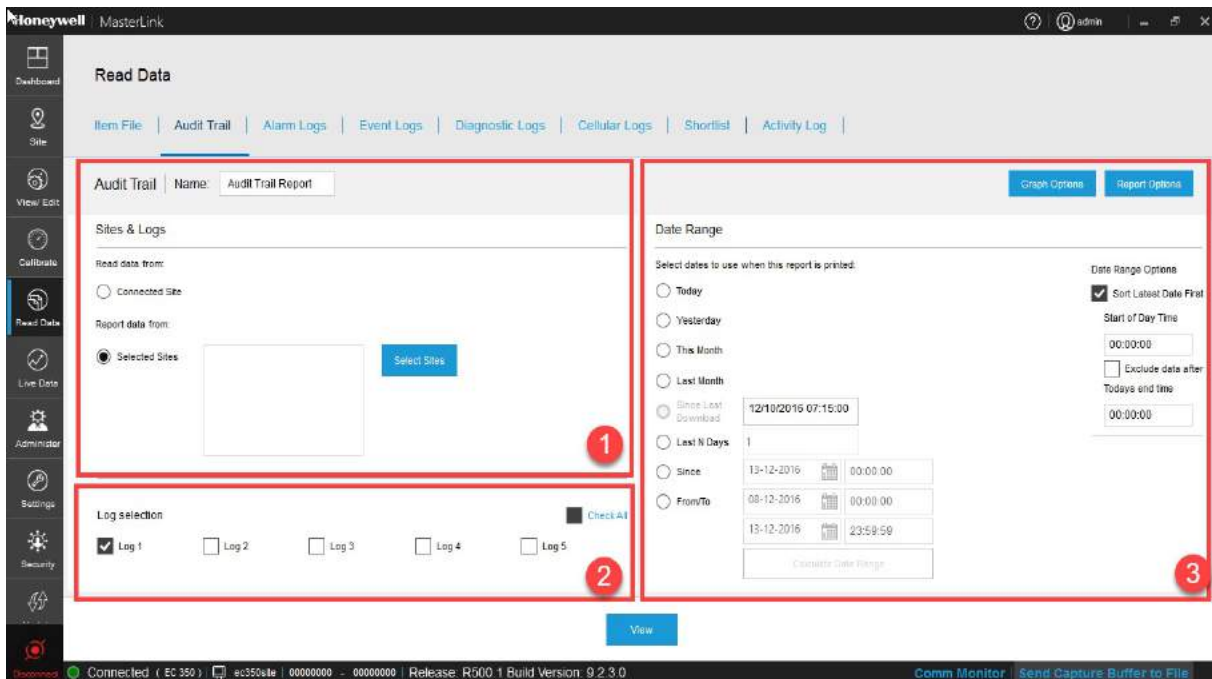
Back Preview Print

Connected (EC 350) ec350site 00000000 - 00000000 Release: R500.1 Build Version: 9.2.3.0 Comm Monitor Send Capture Buffer to File

Note: Application must be connected to an instrument to perform this operation.

4.6.2 Audit Trail

Use the 'Audit Trail' tab to view and download Audit Trail data from the instrument.



Application must be connected to an instrument to view Audit Trail reports.

Relate the steps highlighted in the image above with the steps below:

1. Start by selecting the site. Logs can be read from a connected site (online), or can be retrieved from exiting list of sites (offline). The connected site will be selected by default. For selecting multiple sites use **Select Sites** option.
2. Select the **log** or select **Check All**
3. Select the **Date Range**
4. Click **View** to view Audit Trail Report.

If required, click on **Report Options** to view or add more information in the report.

Audit Trail Report can be viewed without Summary - This function is used to provide a full report (without summary) of the audit trail data that pertains to a particular instrument.

Relate the steps highlighted in the image above with the steps below:

1. Start by checking **Use User Text**, and entering the name of the report.
2. Select whether *start of gas day* is to be included in **Beginning of report** or towards the **End of Report**.
3. Select the **Units Selections**.
4. Click **View**.

The Audit Trail Report appears based on selected criteria.

Honeywell MasterLink

Read Data

Item File | **Audit Trail** | Alarm Logs | Event Logs | Diagnostic Logs | Cellular Logs | Shortlist | Activity Log

Audit Trail Report

Report Name: Audit Trail Report
Report Selections: 1 site, From 2016-11-01 00:00:00 To 2016-11-30 23:59:59

Site Info: 00000000.00000000 Log #: 1 View

Site ID: 0 0 Log 1 Site Name: ec350site Site Location: hyd

Log Date and Time	Incremental Cor Vol (CCF)	Incremental Unc Vol (CCF)	P1 Interval Avg Press (PSI-G)	Interval Avg Gas Temp (C)	Battery Voltage Reading (VOLTS)	Corrected Volume (CCF)	Uncorrected Volume (CCF)	P1 Gas Pressure (PSI-G)	Gas Temperature (C)	Case Temperature (C)	Battery Low Volt Limit (VOLTS)
11/25/2016 4:10:00 PM	0	0	.000	-94.17	4.591	9	321322	.000	-94.17	24.18	4.600
11/25/2016 4:15:00 PM	0	0	.000	-94.16	4.591	9	321322	.000	-94.12	24.20	4.600
11/25/2016 4:20:00 PM	0	0	.000	-94.17	4.586	9	321322	.000	-94.26	24.23	4.600
11/25/2016 4:25:00 PM	0	0	.000	-94.17	4.586	9	321322	.000	-94.14	24.23	4.600
11/25/2016 4:30:00 PM	0	0	.000	-94.17	4.588	9	321322	.000	-94.19	24.23	4.600
11/25/2016 4:35:00 PM	0	0	.000	-94.16	4.588	9	321322	.000	-94.09	24.28	4.600
11/25/2016 4:40:00 PM	0	0	.000	-94.16	4.587	9	321322	.000	-94.16	24.33	4.600

Print Destination: Adobe PDF

Back Preview **Print** **Export CSD**

Disconnected Connected (EC 350) ec350site 00000000 - 00000000 Release: R500.1 Build Version: 9.2.3.0 Comm Monitor Send Capture Buffer to File

You can choose to **Export** or **Print** the data.

4.6.2.1 Audit Trail Graphs

The Audit Trail Graph function displays selected report items in graph format. It is recommended that items with numeric values are used for plotting the graph.

Note: This is an offline operation.

Relate the steps highlighted in the image above with the steps below:

1. Start by selecting the site from the Site and Logs section.
2. Select one **log** out of 5 logs.
3. Select the **Date Range**

Select the date range. Select the check box next to the date range choice.

- Selecting today, will report data from 12-hours up to the time the report is begun.
- Choosing Yesterday will print from a 24-hour span up to the time the report is begun.
- This Month reports only the data for the current month.
- The Last Month reports back 30 days.
- If Last N Days is chosen, enter the number of days.
- When selecting either Since or From/To, date and time fields appear on the screen for input.

Click **Graph Options** to customize the audit trail graph.

Relate the steps highlighted in the image with the steps below:

1. Configure the Y-Axis item, Y Min, Y Max, Color and Line Style
2. Select the required option from the **Log selection**

Audit Trail Graph - Y Axis Item

Toggle-click on the box to select/deselect the item(s) to graph. The items chosen will be displayed on the actual graph when the Preview button is clicked.

Audit Trail Graph - Y Min

This option sets the values for the minimum Y scale (vertical scale). To change these defaults, click on that field and enter the new value.

Audit Trail Graph - Y Max

This option sets the values for the maximum Y scale (vertical scale). To change these defaults, click on that field and enter the new value.

Audit Trail Graph - Color

For each of the 4 items, click on the down arrow next to the color fields for selectable options, then click on the selection. The color selections and item titles will be displayed on the actual graph legend when Preview is clicked.

Audit Trail Graph - Line Style

For each of the 4 items, click on the down arrow next to the line style field for selectable options, then click on the selection. Dashed or dotted line styles will not be noticeable on data lines unless the data points are fairly far apart.

Log Selection

- **Each item on separate graph** - Checking this box will draw one item per graph. If this is unchecked, more than one item will be drawn on a graph. A graph can have two Y scales (vertical); one on each side. If two items have the same unit of measure, they can share a Y scale. The Y scales are located along the left and right sides of the graph.
- **Show data points on lines** - Data lines may be drawn with or without dots

3. Click **Show Graph**. The Audit Trail Graph appears based on the selected criteria.

Audit Trail Graph - Save Setup

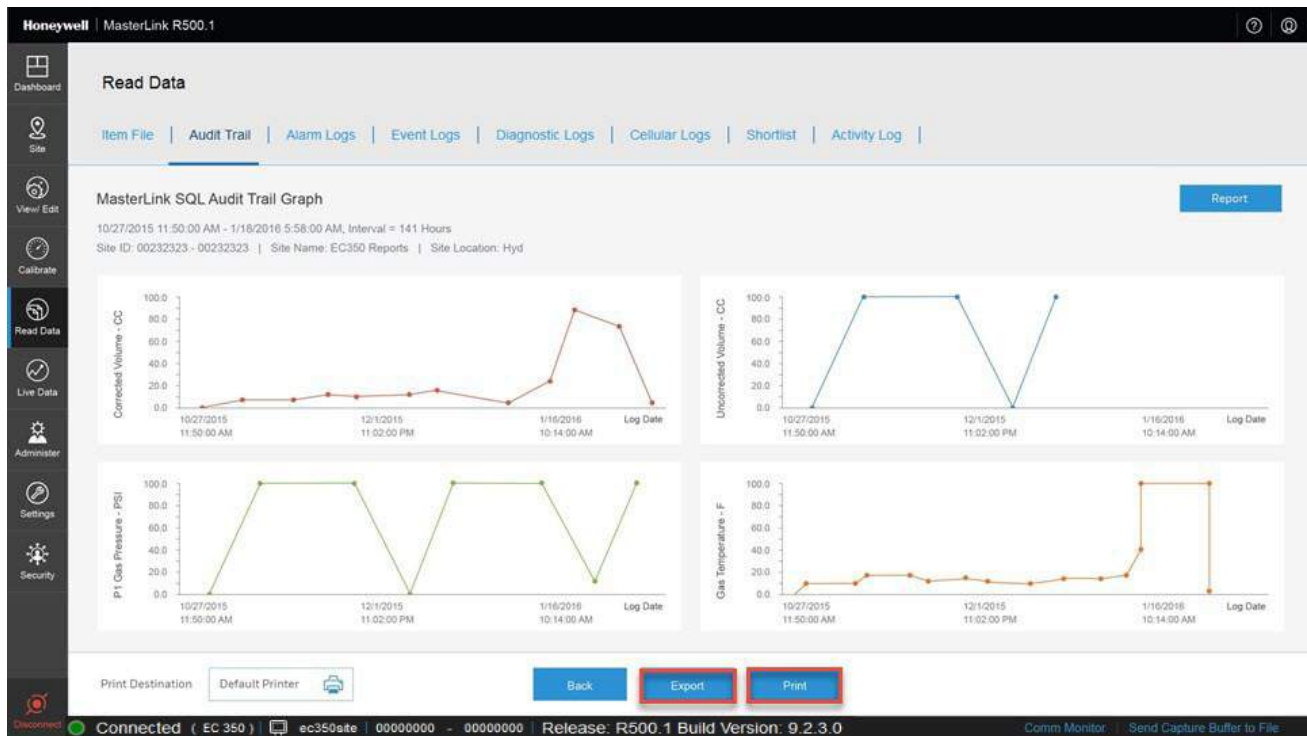
Click this button to save the Audit Trail Graph Setup configuration. These defaults can be reused when you click the Load Setup button. The default file extension is .ags and is saved in the installation designated file folder for report/-graph files.

Audit Trail Graph: Load Setup

Click this button to load the Audit Trail Graph Setup configuration which is previously saved to file with the "Save Setup" feature. The file is saved in the installation designated file folder for report/graph files.

After selecting a file, click the Open button to proceed with this function or Cancel to return to the currently displayed graph setup.

After customizing the graph, finally click **Show Graph** to view Audit Trail Graph.



You can choose to **Export** or **Print** the data.

4.6.3 Alarm Logs

Use the 'Alarm Logs' tab to read and view all alarm activity data from a connected instrument. An Alarm Log record is defined as any alarm activity, which includes new alarms, alarms acknowledged as well as alarms that have been cleared. Alternatively, you can choose to select a list of sites and then generate a report.

4.6.3.1 For Selected sites

Honeywell MasterLink

Read Data

Item File | Audit Trail | Alarm Logs | Event Logs | Diagnostic Logs | Cellular Logs | Shortlist | Activity Log

Alarm Logs | Name: Alarm Log Report | Report Options

Sites

Read data from: ☒ Connected Site

Report data from: ☐ Selected Sites

Date Range

Select dates to use when this report is printed:

☐ Today
☐ Yesterday
☐ This Month
☐ Last Month
☐ Since Last Download
☐ Last N Days
☒ From/To

12/10/2016 07:19:58

21-12-2016 00:00:00
01-12-2016 00:00:00
21-12-2016 23:59:59

Calculate Date Range

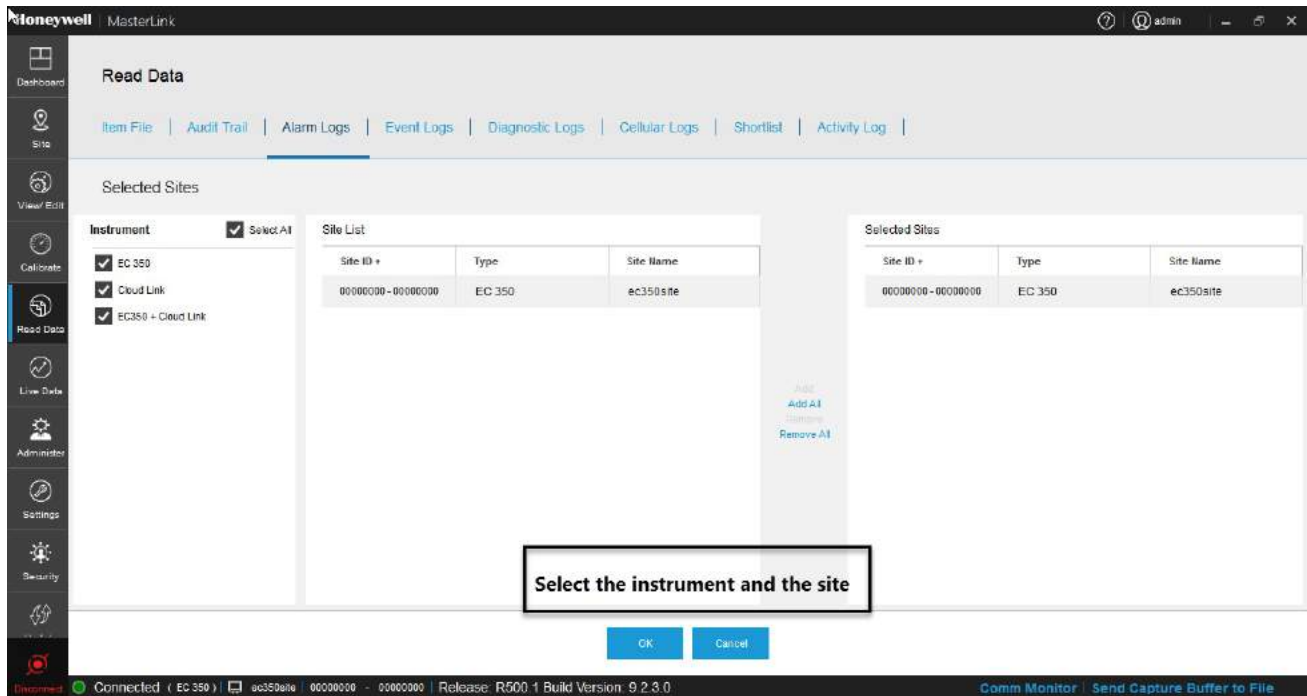
Date Range Options

☒ Sort Latest Date First

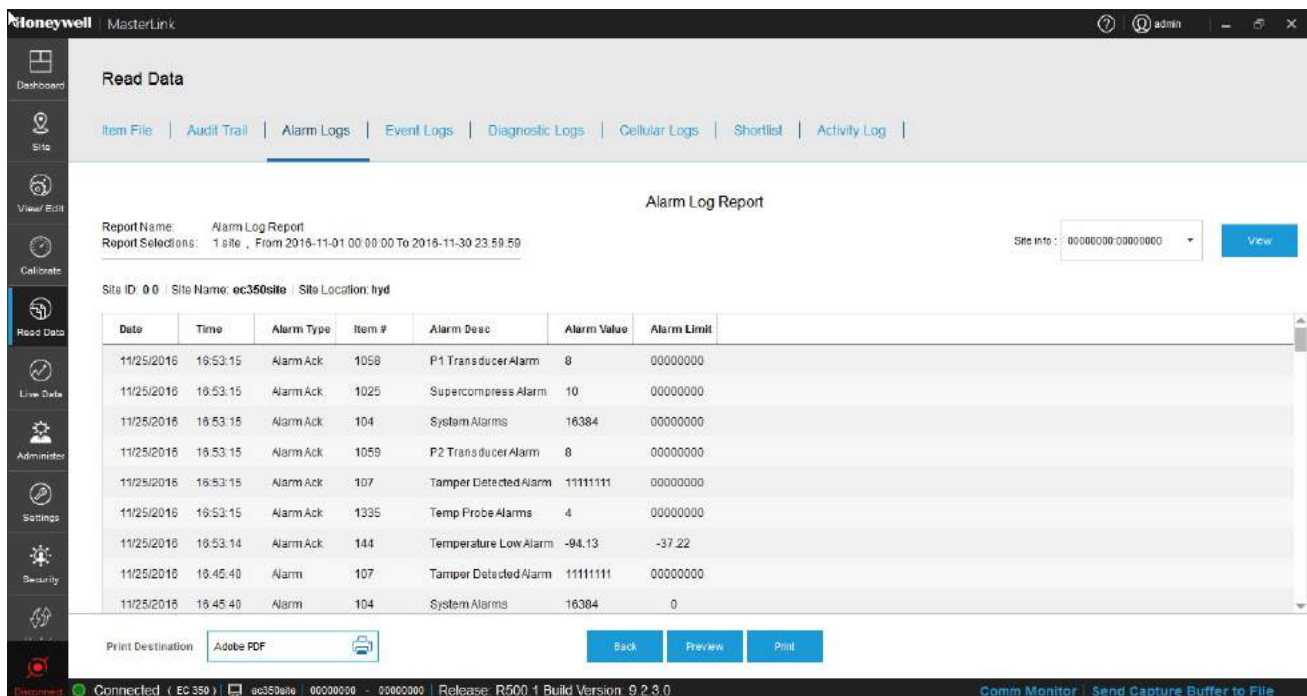
View

Disconnected | Connected (EC 350) | ac350a1e | 00000000 | 00000000 | Release: R500.1 Build Version: 9.2.3.0 | Comm Monitor | Send Capture Buffer to File

Start by selecting sites.



Select the date range of the report and then click **View**. The Alarm Logs appear based on your selected criteria. You can choose to **Preview** or **Print** the data.



4.6.3.2 For Connected site

Read Data

Item File | Audit Trail | Alarm Logs | Event Logs | Diagnostic Logs | Cellular Logs | Shortlist | Activity Log

Alarm Logs | Name: Alarm Log Report

Sites

Read data from:

☒ Connected Site

Report data from:

☐ Selected Sites

Date Range

Select dates to use when this report is printed.

☐ Today

☐ Yesterday

☐ This Month

☐ Last Month

☐ Since Last Downloaded

☐ Last N Days

☐ Since

☒ From/To

12/10/2016 07:19:58

21-12-2016 00:00:00

01-12-2016 00:00:00

21-12-2016 23:59:59

Calculate Date Range

Date Range Options

☒ Sort Latest Date First

View

Select the date range of the report and then click **View**. The Alarm Logs appear based on your selected criteria. Choose to **Preview** or **Print** the data.

Read Data

Item File | Audit Trail | Alarm Logs | Event Logs | Diagnostic Logs | Cellular Logs | Shortlist | Activity Log

Alarm Log Report

Report Name: Alarm Log Report

Report Selections: 1 site, From 2016-11-01 00:00:00 To 2016-11-30 23:59:59

Site Info: 00000000 00000000

View

Site ID: 00 | Site Name: ec350site | Site Location: hyd

Date	Time	Alarm Type	Item #	Alarm Desc	Alarm Value	Alarm Limit
11/25/2016	16:53:15	Alarm Ack	1058	P1 Transducer Alarm	8	00000000
11/25/2016	16:53:15	Alarm Ack	1025	Supercompress Alarm	10	00000000
11/25/2016	16:53:15	Alarm Ack	104	System Alarms	16384	00000000
11/25/2016	16:53:15	Alarm Ack	1059	P2 Transducer Alarm	8	00000000
11/25/2016	16:53:15	Alarm Ack	107	Tamper Detected Alarm	11111111	00000000
11/25/2016	16:53:15	Alarm Ack	1335	Temp Probe Alarms	4	00000000
11/25/2016	16:53:14	Alarm Ack	144	Temperature Low Alarm	-94.13	-37.22
11/25/2016	16:45:40	Alarm	107	Tamper Detected Alarm	11111111	00000000
11/25/2016	16:45:40	Alarm	104	System Alarms	16384	0

Print Destination: Adobe PDF

Back **Preview** **Print**

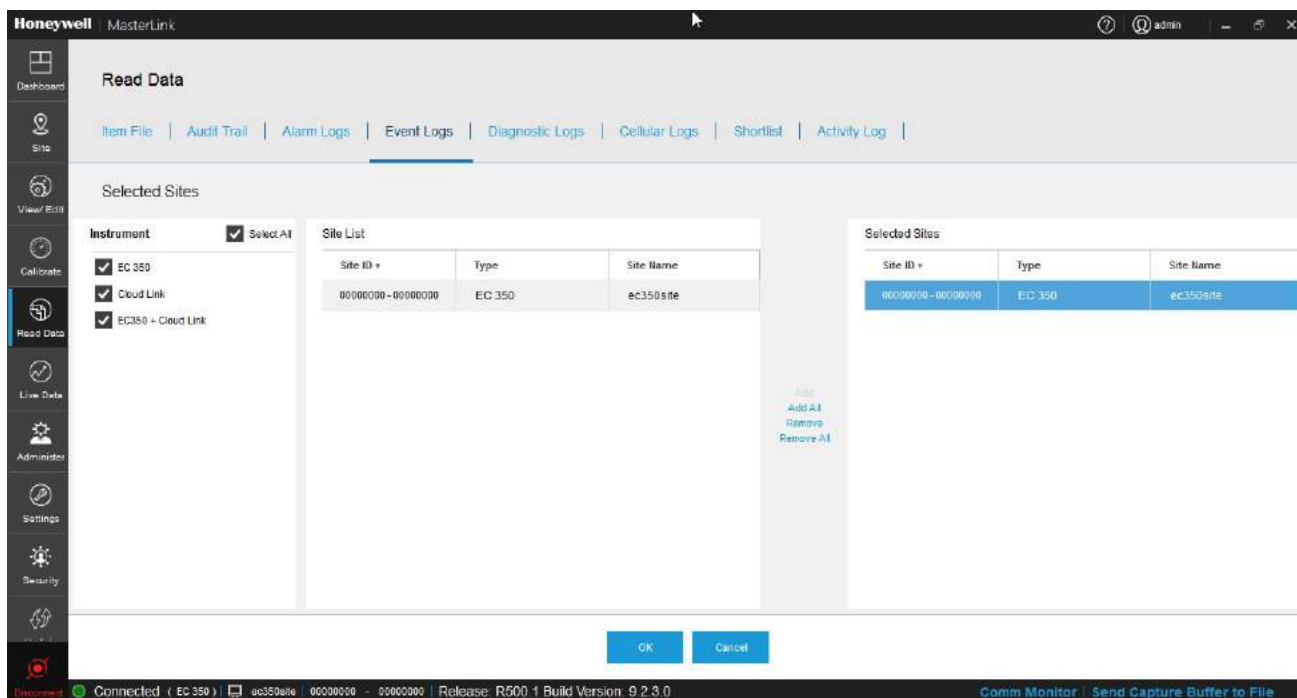
4.6.4 Event Logs

Use the 'Event Logs' tab to read event data from a connected instrument. An "event" documents an item change in the instrument or an instrument download.

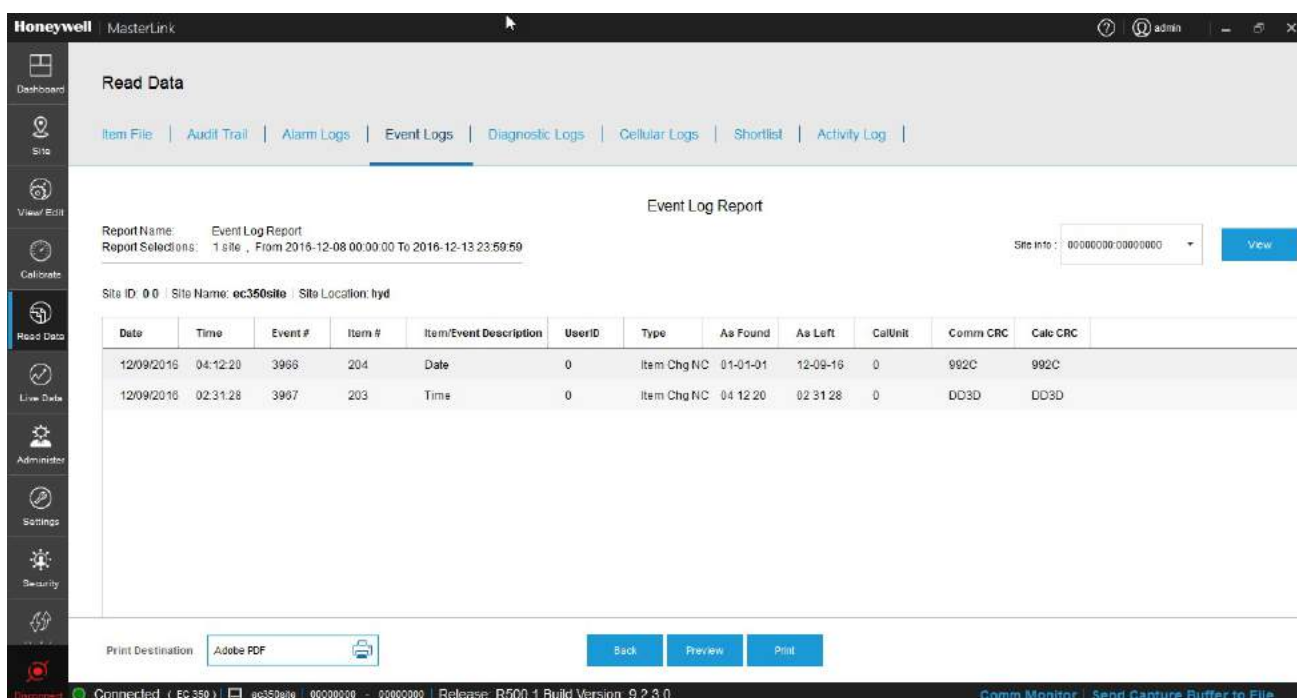
Note: This log is different from the Activity Log because that log mainly focuses on software activity (and some firmware activity) where the Event Log function records activity that is directly linked to and maintained by the instrument.

Relate the steps highlighted in the image above with the steps below:

1. Event Logs can be read from a connected site. Alternatively, user can select a site from the available list of sites and then generate a report.



2. Select the date range of the report.
3. Click **View**. The Event Logs appear based on your selected criteria.



4. **Preview** or **Print** the data.

4.6.5 Diagnostic Logs

Use the 'Diagnostic Logs' tab to read diagnostic data from a Cloud Link 4G Modem.

Diagnostic logs are applicable to Cloud Link 4G Modem only and would be available when connected to Cloud Link 4G Modem or in integrated mode.

The screenshot displays the Honeywell MasterLink R500.1 software interface. The top navigation bar includes 'Dashboard', 'Site', 'View/Edit', 'Calibrate', 'Read Data' (highlighted), 'Live Data', 'Administer', 'Settings', 'Security', 'Update', and a power icon. The 'Read Data' section is titled 'Read Data' and contains tabs for 'Item File', 'Audit Trail', 'Alarm Logs', 'Event Logs', 'Diagnostic Logs' (selected), 'Cellular Logs', 'Shortlist', and 'Activity Log'. Below the tabs, the 'Diagnostic Logs' section is titled 'Diagnostic Logs' with a 'Name' field set to 'Diagnostic Log Report'. The main content area is divided into two panels. The left panel, titled 'Sites', has a 'Read data from:' section with a radio button for 'Connected Site' and a 'Report data from:' section with a radio button for 'Selected Sites' and a 'Select Sites' button. The right panel, titled 'Date Range', has a 'Select dates to use when this report is printed:' section with radio buttons for 'Today', 'Yesterday', 'This Month', 'Last Month', 'Since Last Downloaded' (selected), 'Last N Days' (with a value of 1), 'Since' (with date and time fields), and 'From/to' (with date and time fields). A 'Calculate Date Range' button is at the bottom of the 'Date Range' section. A 'View' button is located at the bottom center of the interface.

You can read Diagnostic logs from the currently connected site. Alternatively, you can choose to select a list of sites and then generate a report.

Honeywell MasterLink R500.1

Read Data

Item File | Audit Trail | Alarm Logs | Event Logs | Diagnostic Logs | Cellular Logs | Shortlist | Activity Log

Diagnostic Logs Name: Diagnostic Log Report

Sites

Read data from:

☐ Connected Site

Report data from:

☒ Selected Sites Select Sites

Date Range

Select dates to use when this report is printed:

☒ Today Date Range Options ☒ Sort Latest Date First

☐ Yesterday

☐ This Month

☐ Last Month

☐ Since Last Download: 09/28/2016 19:56:21

☐ Last N Days: 1

☐ Since: 9/28/2016 00:00:00

☐ From/To: 9/23/2016 00:00:00

9/28/2016 23:50:50

Calculate Date Range

View

Relate the steps highlighted in the image above with the steps below:

1. Start by selecting the required site(s).
2. Then select the date range, and finally click **View** to read the Diagnostic log report.
3. You can also choose to **Export** or **Print** the data.

4.6.6 Cellular Logs

Use the 'Cellular Logs' tab to read cellular data from a connected Cloud Link 4G Modem. Cellular Logs contain cellular connectivity and communication data of the connected modem.

The screenshot displays the Honeywell MasterLink R500.1 software interface. The top navigation bar includes 'Dashboard', 'Site', 'View/Edit', 'Calibrate', 'Read Data', 'Live Data', 'Administer', 'Settings', 'Security', 'Update', and a 'View' button. The 'Read Data' section is active, showing a 'Cellular Logs' tab. The 'Read Data' section has a 'Name' field set to 'Cellular Log Report'. The 'Sites' section shows 'Read data from:' with 'Connected Site' selected and 'Report data from:' with 'Selected Sites' selected. A 'Select Sites' button is present. The 'Date Range' section allows selecting dates for the report, with options for 'Today', 'Yesterday', 'This Month', 'Last Month', 'Since Last Downloaded', 'Last N Days', 'Since', and 'From/To'. The 'Date Range Options' section shows 'Sort Latest Date First' checked. The 'Calculate Date Range' button is visible.

Honeywell MasterLink R500.1

Read Data

Item File | Audit Trail | Alarm Logs | Event Logs | Diagnostic Logs | Cellular Logs | Shortlist | Activity Log

Cellular Logs | Name: Cellular Log Report

Sites

Read data from:

☐ Connected Site

Report data from:

☒ Selected Sites

Date Range

Select dates to use when this report is printed.

☒ Today

☐ Yesterday

☐ This Month

☐ Last Month

☐ Since Last Downloaded 09/28/2016 20:03:30

☐ Last N Days 1

☐ Since 9/28/2016 00:00:00

☐ From/To 9/23/2016 00:00:00

9/28/2016 23:59:59

Date Range Options

☒ Sort Latest Date First

You can read Cellular logs from the currently connected site. Alternatively, you can choose to select a list of sites and then generate a report.

Relate the steps highlighted in the image above with the steps below:

1. Start by selecting the required site
2. Then select the date range, and finally click **View** to read the Cellular log report.
3. You can also choose to **Export** or **Print** the data.

4.6.7 Shortlist

The Shortlist Template created using [Manage Shortlist](#) tab can be used to generate report for the corresponding shortlist.

Relate the steps highlighted in the image above with the steps below:

1. Select the site list or the item file.
2. Select the dates to use when the report is printed.
3. Click **Report Options** to enter user text. Check *Use User Text*, type the text that should appear in the report in the **User Text** box.
4. Click **View** to view the shortlist report.

Dashboard

Site

View/ Edit

Calibrate

Read Data

Live Data

Administer

Settings

Security

Disconnected

HoneywellMasterLink R500.1

Read Data

Item FileAudit TrailAlarm LogsEvent LogsDiagnostic LogsShortlistActivity Log

Shortlist

Report Name: Shortlist Report
Report Selections: 1 site
From: 04/08/2015 10:43:00
To: 04/13/2015 10:43:00

Site ID: 00000000000000000000 | Site Name: EC350 Reports | Site Location: Hyd

Item Number	Item Description	Value	Unit
0000	Corrected Volume	00242990	CF
0002	Uncorrected Volume	00266559	CF
0005	Ch-A pulses waiting	00000000	--
0006	Ch-B pulses waiting	00000000	--
0007	Ch-C pulses waiting	00000000	PSI
0008	P1 gas pressure	13.775	PSI
0010	P1 high alarm limit	99999.99	PSI
0011	P1 low alarm limit	-1.000	PSI
0012	P1 Cal atmos pressure	0.0000	PSI

Item Number	Item Description	Value	Unit
0013	Excess TCal Change %	2.0000	CF
0014	Total Correction Factor	1.0000	CF
0015	Press Correction Factor	1.0000	--
0016	Temp Correction Factor	1.0000	--
0017	Aux Correction Factor	1.0000	PSI
0018	Unsquared Supercompress	1.0000	PSI
0019	Battery Voltage Reading	2.372	PSI
0020	Battery Low Volt Limit	4.600	PSI
0021	Shutdown Voltage Limit	4.000	PSI

Print Destination: Default Printer

BackExportPrint

Connected (EC 350) | Site 045 | 11111111-22222222Comm Monitor | Send Capture Buffer to File

You can choose to **Preview** or **Print** the data.

Note: In Shortlist report, firmware version and serial number are not be displayed until the user selects Firmware version (**item #122**) and serial number (**item#62**) in Shortlist.

4.6.8 Activity Log

Use the 'Activity log' tab to read data on software activity.

Select the date range of the report and then click **Report Options**.

Honeywell MasterLink

Read Data

Item File | Audit Trail | Alarm Logs | Event Logs | Diagnostic Logs | Cellular Logs | Shortlist | **Activity Log**

Activity Log | Name: Activity Log Report | **Report Options**

Date Range

Select dates to use when this report is printed:

- ☐ Today
- ☐ Yesterday
- ☐ This Month
- ☐ Last Month
- ☐ Last N Days: 1
- ☐ Since: 13-12-2016 00:00:00
- ☒ From/To: 08-12-2016 00:00:00 to 13-12-2016 23:59:59

Calculate Date Range

Date Range Options

☐ Sort Latest Date First

View

Disconnected | Connected (EC 350) | ao350a16 | 00000000 - 00000000 | Release: R500.1 Build Version: 9.2.3.0 | Comm Monitor | Send Capture Buffer to File

Customize the report in the **Report Options** page.

The screenshot shows the Honeywell MasterLink software interface. The title bar reads "Honeywell MasterLink". The sidebar on the left contains icons for Dashboard, Site, View/Edit, Calibrate, Read Data (highlighted), Live Data, Administrator, Settings, Security, and a status indicator at the bottom. The main content area is titled "Read Data" and has a sub-header "Activity Log" with a "Name: Activity Log Report" field. Below this, there are four numbered red boxes indicating steps for customization:

- 1**: A checkbox labeled "Use User Text" and a text input field labeled "User Text".
- 2**: A dropdown menu labeled "Messages to include" with "All" selected.
- 3**: Radio buttons for "Display Activity Duration in", with "Minutes" selected and "Seconds" as an option.
- 4**: A "Sort Order" dropdown menu showing a list of data columns: "Activity Date", "Activity Type", "Activity Description", and "Activity Duration". Each item has a "+" or "-" icon next to it for selecting the sort order.

At the bottom of the main content area are "Back" and "View" buttons. The status bar at the very bottom shows connection status, IP address, and version information.

Relate the steps highlighted in the image above with the steps below:

1. Start by checking **Use User Text**. Type the text that should appear in the report in this box.
2. Select the **Messages to include**. There are 3 options for message reporting.
3. Select the **Display Activity Duration in**.
4. Select the **Sort Order**. This list shows the data columns that will be used in the report. Double click on the data type to change the sort order for that column: + (ascending) or - (descending).
5. Finally click **View** to view activity log report.

4.7 Live Data

The Live Data Graph function will graph data read directly from connected instruments.

- The computer/laptop must be connected to an instrument in order to display a live graph.
- You select which items to graph as well as other graph configuration items.
- The 'Live Data Graph' screen will display previously selected actual graph items in two graph sections when this function first begins. The device adjusts the upper and lower limits for each items from the settings provided.

Honeywell MasterLink

Live Data

Live Data Graph

Item to Graph

Y Axis Item	Y Min	Y Max	Alarm Low	Alarm High	Graph Number
<input checked="" type="checkbox"/> P1 Pressure	0	100	-71.117	1422335	1
<input checked="" type="checkbox"/> Gas Temp	-40	170	-37.22	73.89	1
<input checked="" type="checkbox"/> Case Temp	-40	170	22.06	27.63	1
<input checked="" type="checkbox"/> Flow Rate	0	500	0	0	1
<input checked="" type="checkbox"/> Dial Rate	0	20000	0	0	1
<input type="checkbox"/> P2 Pressure	0	100	-1	99999.99	1

Graph Configuration

Y Axis Item	Color	Line Style
P1 Pressure	Blue	Solid Line(Thick)
Gas Temp	Green	Solid Line(Thick)
Case Temp	Orange	Solid Line(Thick)
Flow Rate	Magenta	Solid Line(Thick)
Dial Rate	Red	Solid Line(Thick)
P2 Pressure	Black	Solid Line(Thick)

Log selection

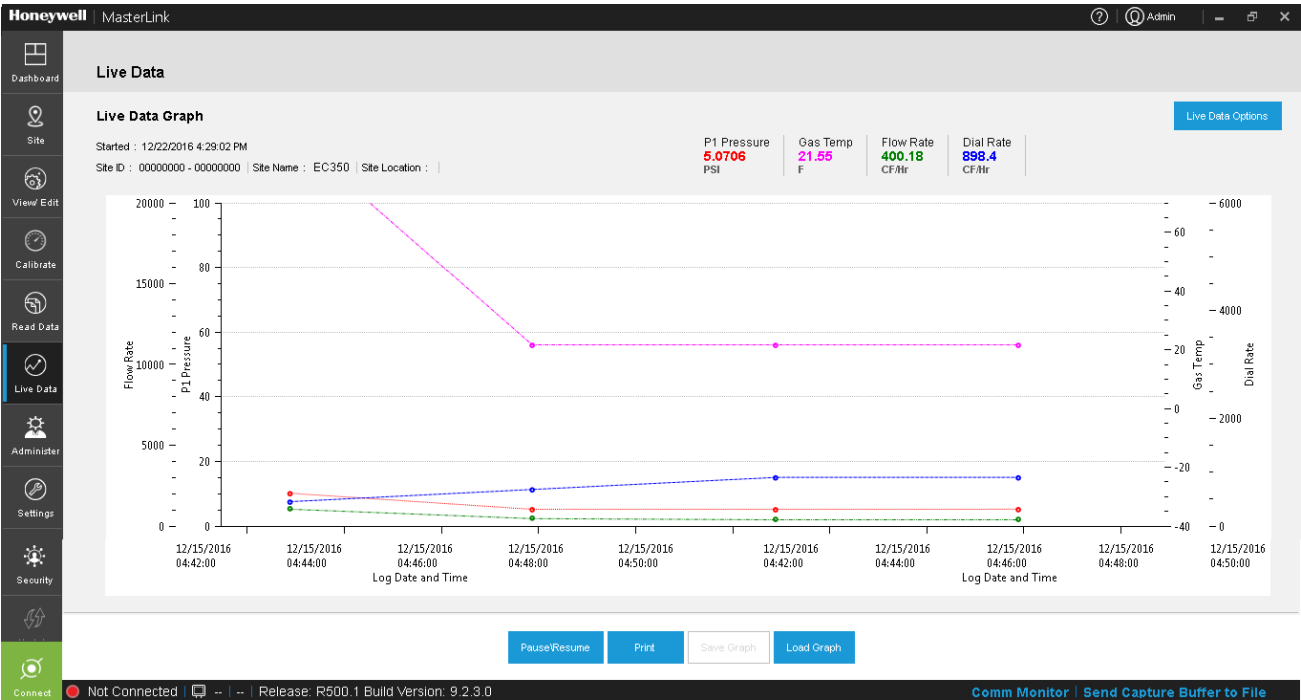
☒ Each item on separate graph ☒ Show Data Point on Lines ☐ Draw alarm lines

Reading Interval 2 Seconds **X Axis Width** 15 Seconds

[Save](#) [Show Graph](#)

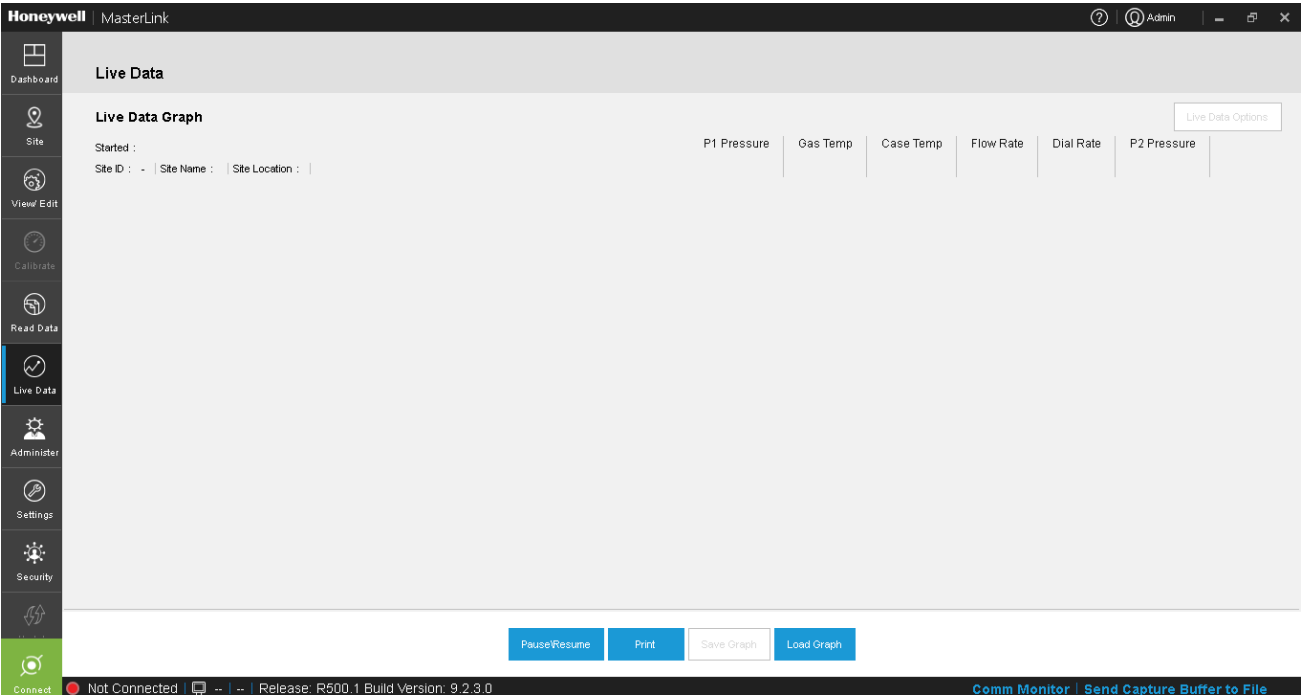
Disconnected Connected (FC 350) ac350date 00000000 - 00000000 Release: R500.1 Build Version: 9.2.3.0 Comm Monitor | Send Capture Buffer to File

Click **Show Graph** to view the graph.

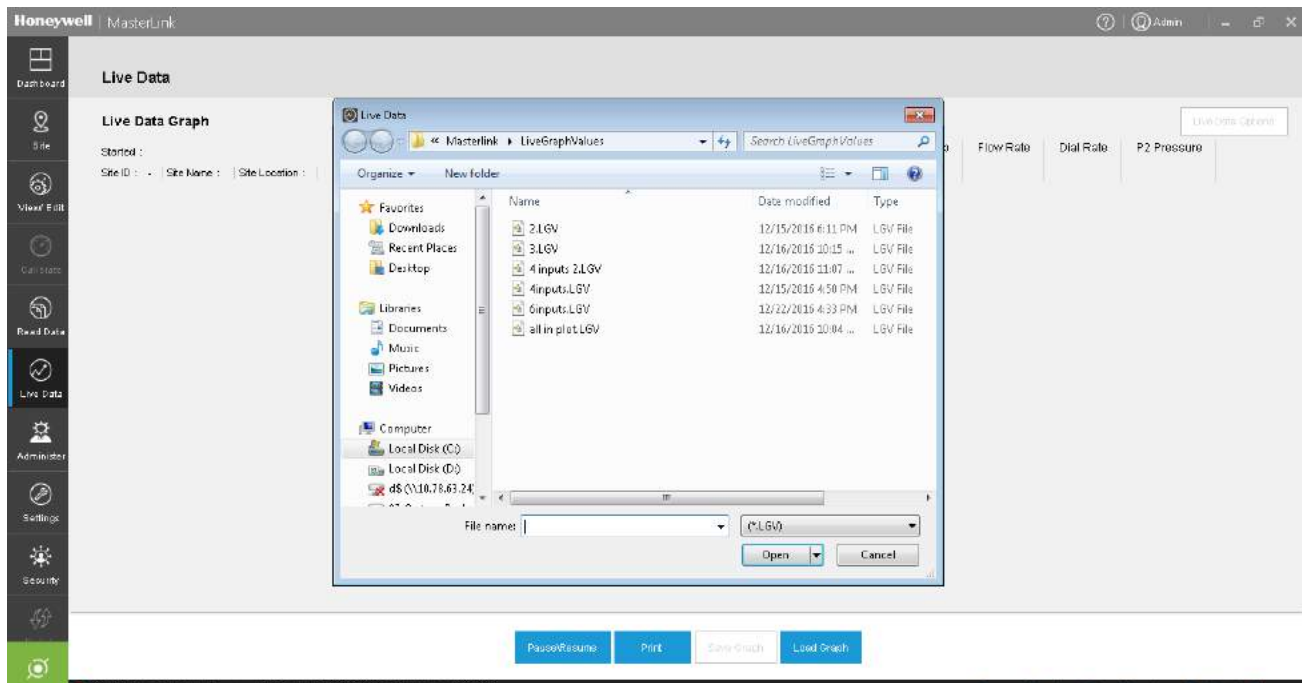


Click **Save Graph** to save the Live Graph Setup. By default, .LGV file is saved in the *C:\ProgramData\Honeywell\MasterLink Software Application \LiveGraphSettings* folder.

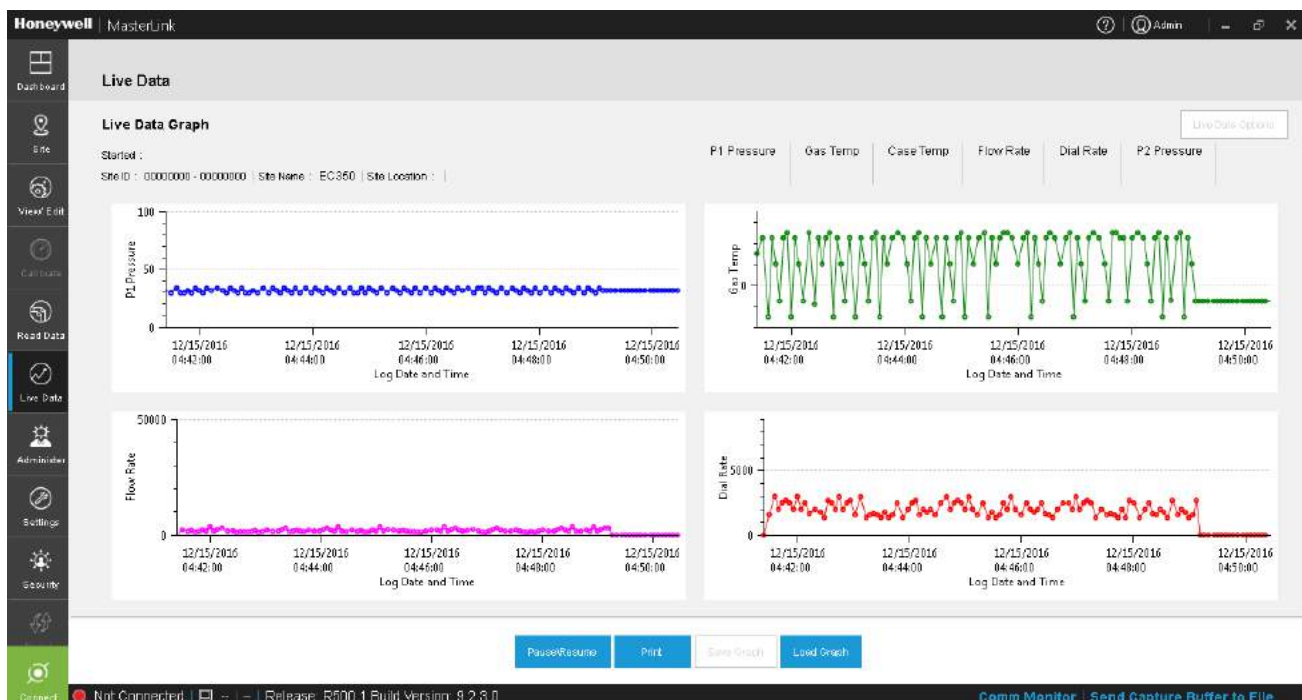
You can view graphs offline as well.



Click **Load Graph** to load saved graphs.



Select the desired graph and click **Open**.



Attention: Load Graph is disabled when we have an active connection to the instrument. Please disconnect from the instrument to use this option.

Items to Graph

The availability of items depends on the instrument linked to the computer. Toggle-click on the box to select/deselect the item(s) to graph. The default values for the minimum and maximum Y scale (vertical scale) correspond to the alarm limits. To change these defaults, click on that field and enter the new value.

Note: You can select numbers in the Graph Number column to group the items together. For example, if you want to view the Gas temperature and the Case temperature on the same graph, you can assign a value of 1 for both the items, and they will be displayed on the same graph. If you do not assign a graph number, then all 4 items will be displayed on the same graph. Viewing all 6 inputs is possible in 2 or more graphs.

Graph Configuration

Pressure 1, Pressure 2, Gas Temperature, Case Temperature, Dial Rate, and Flow Rate items are available for graph configuration. For each of the 6 items, click on the down arrow next to the color or line style fields for selectable options, then click on the selection. Dashed or dotted line styles will not be noticeable on data lines unless the data points are fairly far apart. Toggling this box next to the following options on the Live Graph Setup dialog screen can activate other selections that affect the display of the graph.

Log selection

1. **Each item on separate graph:** Checking this box will draw one item per graph. If this is unchecked, more than one item will be drawn on a graph. A graph can have two Y scales (vertical); on each side. If two (up-to 4) items have the same unit of measure, they can share a Y scale. The Y scales are located along the left and right side of the graph.

Honeywell MasterLink

Live Data

Live Data Graph

Item to Graph						Graph Configuration		
Y Axis Item	Y Min	Y Max	Alarm Low	Alarm High	Graph Number	Y Axis Item	Color	Line Style
<input checked="" type="checkbox"/> P1 Pressure	0	100	10	100	1	P1 Pressure	Red	Dot Line
<input checked="" type="checkbox"/> Gas Temp	-40	70	-22	122	1	Gas Temp	Magenta	Dash Dot Line
<input checked="" type="checkbox"/> Case Temp	-40	70	69.79	81.21	1	Case Temp	Orange	Solid Line(Thick)
<input checked="" type="checkbox"/> Flow Rate	0	20000	0	0	1	Flow Rate	Green	Dash Dot Dot
<input checked="" type="checkbox"/> Dial Rate	0	6000	0	0	2	Dial Rate	Blue	Dashed Line
<input checked="" type="checkbox"/> P2 Pressure	0	100	5	120	2	P2 Pressure	Black	Solid Line(Thick)

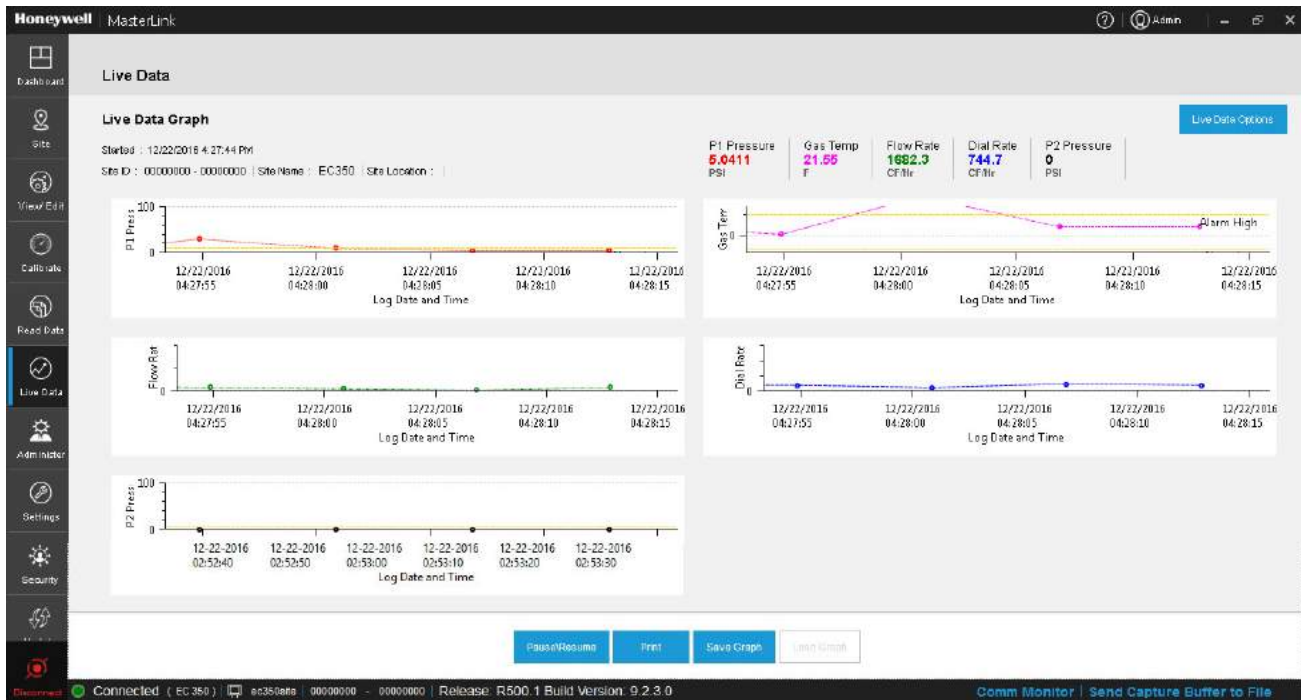
Log selection

☐ Each item on separate graph ☒ Show Data Point on Lines ☐ Draw alarm lines

Reading Interval: 1 Seconds X Axis Width: 15 Seconds

Save Show Graph

Disconnected Connected (EC 350) EC350 00000000 - 00000000 Release: R500.1 Build Version: 9.2.3.0 Comm Monitor | Send Capture Buffer to File



2. **Show data points on lines:** Data lines may be drawn with or without dots.
3. **Draw alarm lines:** Check this box if the alarm lines are to be drawn on the graph.
4. **Reading Interval:** Enter a number for the Reading Interval (in seconds). This option controls the frequency with data is read from the instrument and thus, how often points are plotted. Please note that point-to-point spacing may vary somewhat due to rounding and screen resolution.
5. **X-Axis Width:** Enter a number for the X-Axis Width (in seconds). The X-axis is located across the bottom of the graph. This option controls the number of data points shown on the graph at one time. Please note that a slightly different number of data points may actually be shown due to rounding and screen resolution.

Click **Show Graph** to view the graph.

4.8 Administer

Related topics:

[Activity Log](#)

[Exporting Instrument Data](#)

[Importing Instrument Data](#)

[Item Template Configuration](#)

4.8.1 Activity Log - Purge

Use Activity log - Purge to permanently delete the activity logs of the MasterLink software application. Please note that this log is different from the Event Log because this log mainly focuses on software activity (and some firmware activity) where the Event Log function records activity that is directly linked to and maintained within the instrument.

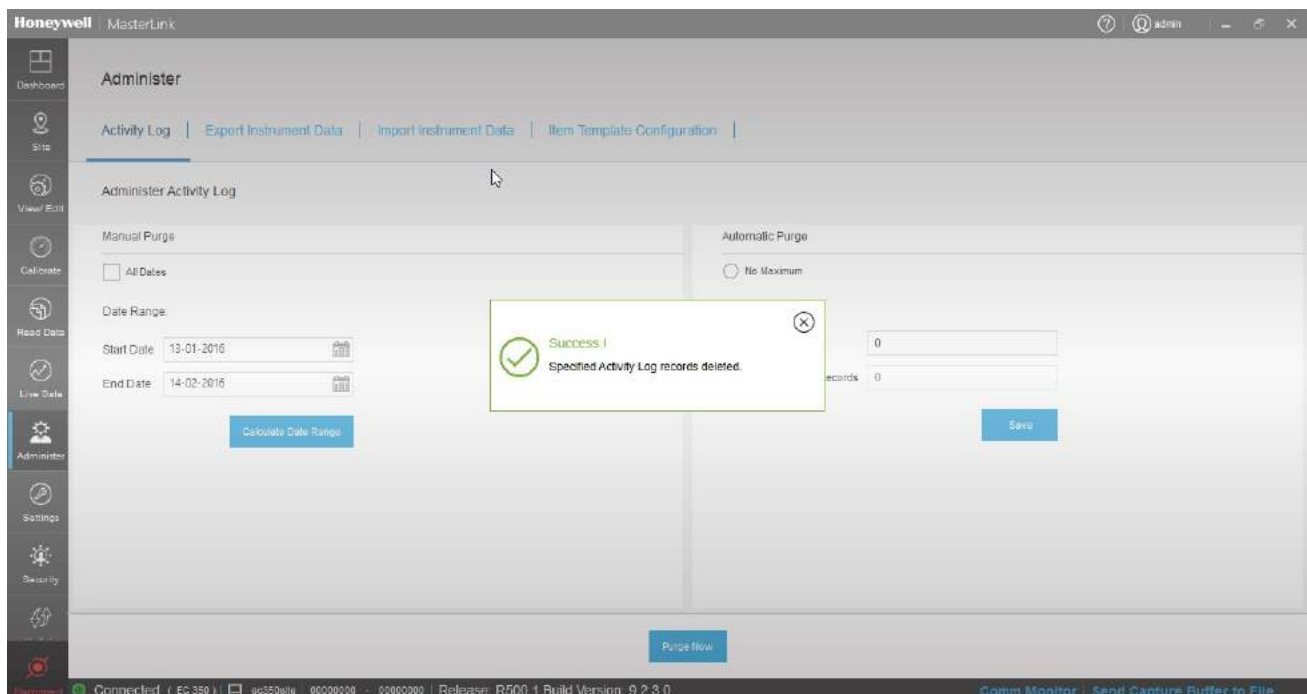
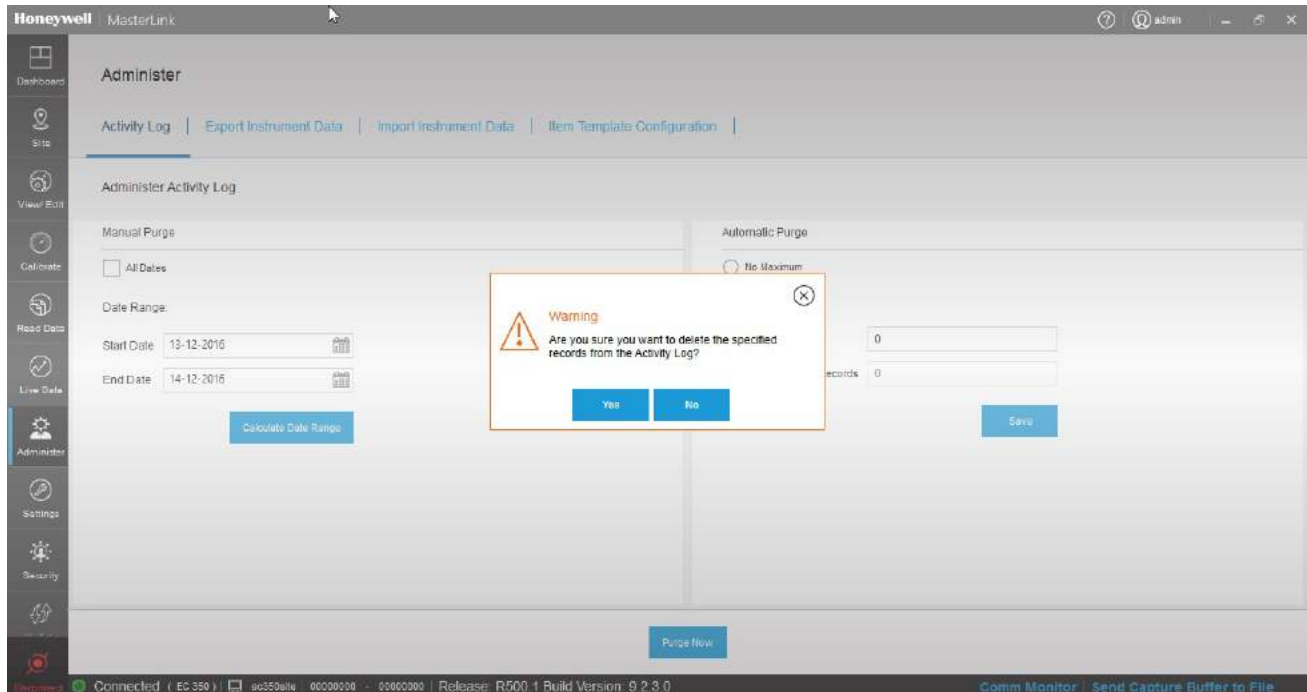
The screenshot displays the 'Administer' section of the MasterLink software. The 'Administer Activity Log' panel is active, showing two configuration options for purging activity logs. The 'Manual Purge' section is highlighted with a red box, showing the 'All Dates' checkbox selected, and date range fields for 'Start Date' (13-12-2016) and 'End Date' (14-12-2016). Below these fields is a 'Calculate Date Range' button. The 'Automatic Purge' section is also highlighted with a red box, showing the 'No Maximum' radio button selected, and input fields for 'Number of Days' (0) and 'Number of Data Records' (0). A 'Save' button is located below these fields. At the bottom of the panel, there is a 'Purge Now' button. The interface includes a sidebar with navigation icons and a status bar at the bottom showing connection status and version information.

Manual Purge - This method requires that a date parameter be set. The default setting is *All Dates*. If this is set, every record in the activity log will be purged. To de-select this option and open the fields for starting and ending date entries, uncheck on the **All Dates** box. Enter the desired dates, or click the **Calculate Date Range** button to automatically retrieve the database starting and ending dates. After the date range has been set, click the **Purge Now** button to execute this function.

Automatic Purge - Although the default setting is No Maximum (which means that no records are removed until the manual method is executed), records may be automatically removed without user intervention. Records can be removed after the file has reached a set number of days or number of data records. To set one of these two limits, de-

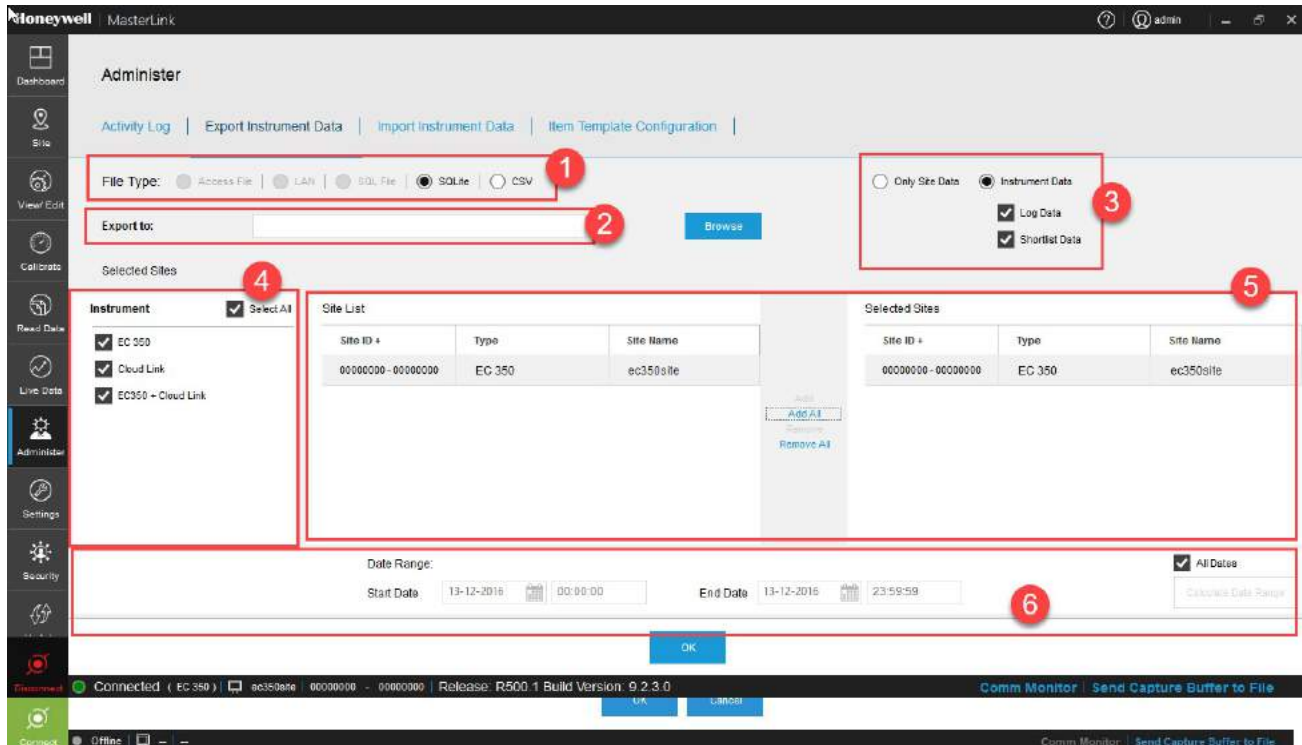
select the No Maximum option by clicking on that radio button, and then select the radio button next to *Number of Days* or *Number of Data Records*. Next, enter the number of days for data records in the box for the option that was chosen. Finally click **Save**.

Click **Purge Now**, to manually remove activity logs.



4.8.2 Export Instrument Data

The 'Export Instrument Data' tab can be used to export instrument data.

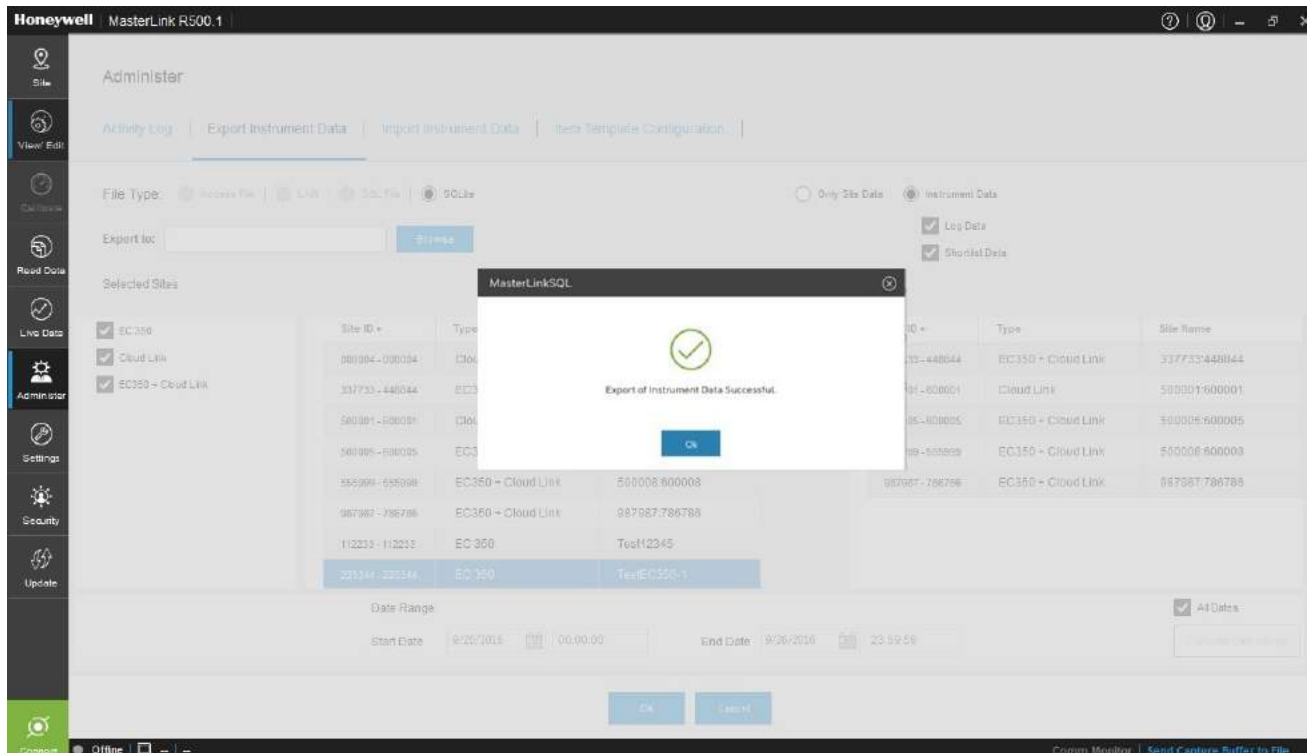
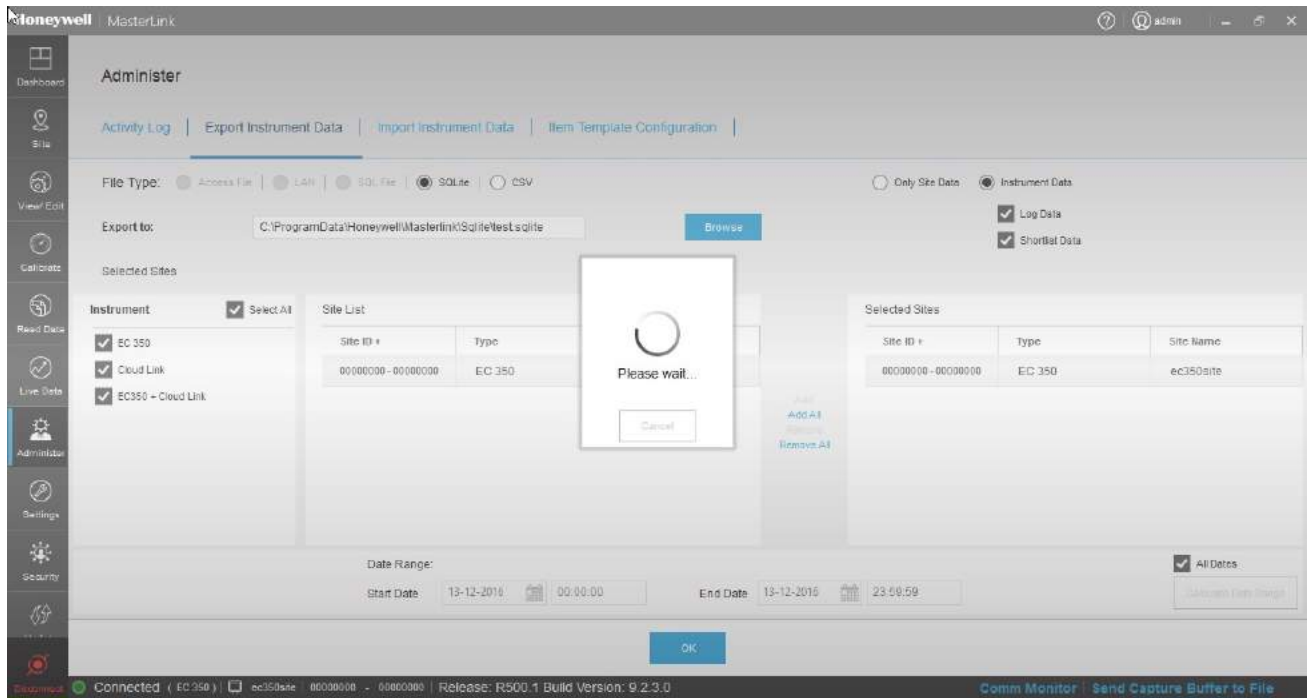


Note: Export SQL option is disabled in Masterlink Application

Relate the steps highlighted in the image with the steps below:

1. Start by selecting select the export file type
 - LAN, SQL File, and Access File are not supported when MasterLink Software Application is installed with SQLite as database.
2. Select the location where you need the instrument data to be exported.
3. Select the type of data that.
4. Select instrument type.
5. A site list gets populated based on your selected instruments. Select the site(es) and use *Add/Add All/remove/Remove All* to add or remove sites.
6. Select the date range.

Click **OK** to export instrument data.



4.8.3 Import Instrument Data

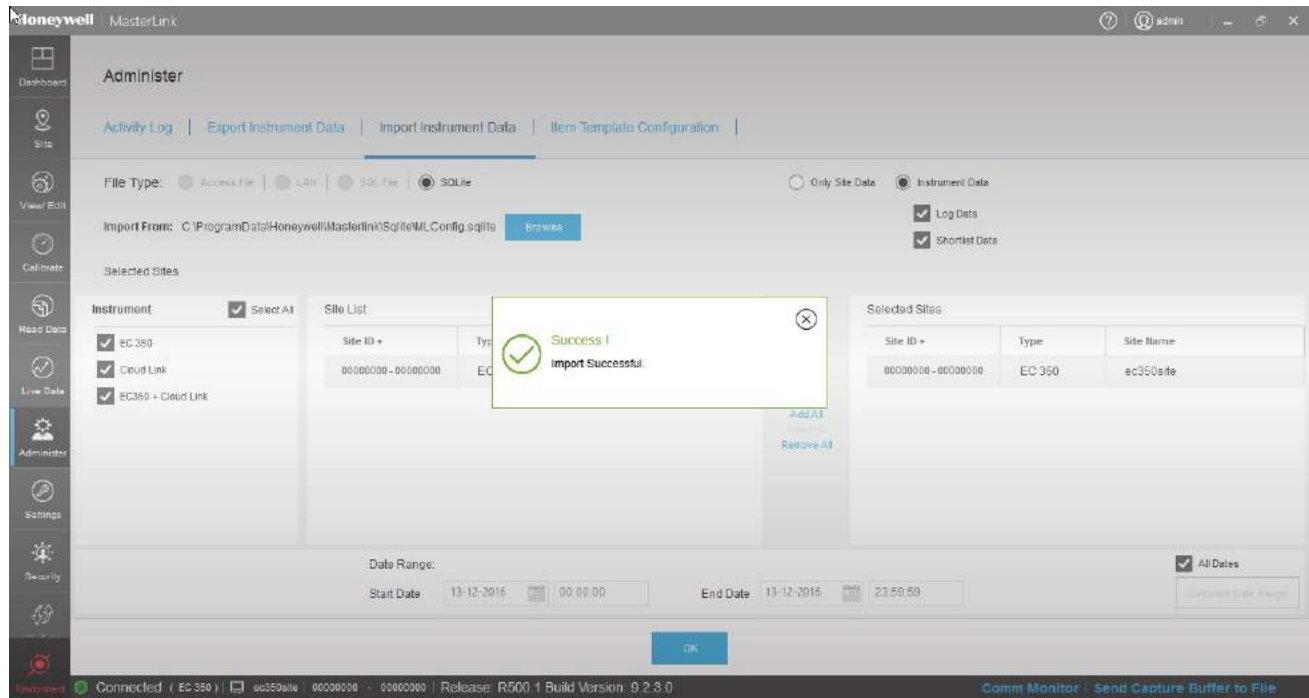
The 'Import Instrument Data' tab can be used to import instrument data.

The screenshot shows the 'Import Instrument Data' tab in the Honeywell MasterLink Administrator application. The interface includes a sidebar with navigation options like Dashboard, Site, View/Edit, Calibrate, Read Data, Live Data, Administrator, Settings, Security, and Troubleshooting. The main area has tabs for Activity Log, Export Instrument Data, Import Instrument Data (selected), and Item Template Configuration. The 'Import Instrument Data' section contains: 1. File Type selection (Access File, LAN, SQL File, SQLite selected). 2. Import From path (C:\ProgramData\Honeywell\MasterLink\SQLite\MLConfig.sqlite) with a Browse button. 3. Data source selection (Only Site Data, Instrument Data selected) with checkboxes for Log Data and Shortest Data. 4. Instrument selection (EC 350, Cloud Link, EC350 - Cloud Link) with a Select All checkbox. 5. Site List table with columns Site ID, Type, and Site Name, containing one entry for EC 350. 6. Date Range selection (Start Date: 13-12-2016 00:00:00, End Date: 13-12-2016 23:59:59) with an All Dates checkbox. An OK button is at the bottom.

Relate the steps highlighted in the image with the steps below:

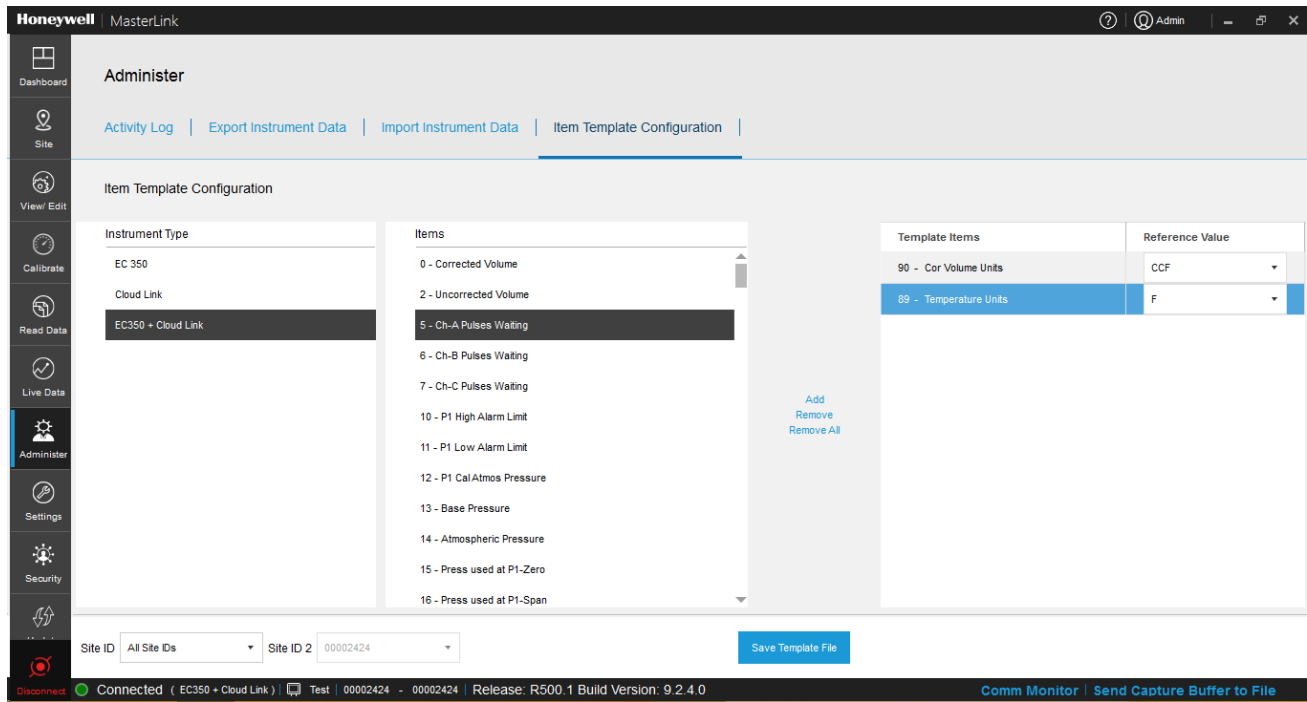
1. Start by selecting select the import file type. - **SQL** or **SQLite**
 - LAN, SQL File, and Access File are not supported when MasterLink Software Application is installed with SQLite as database.
2. Select the physical location of the file to be imported.
3. Select the type of data source.
4. Select the instrument type.
5. A site list gets populated based on selected instrument types. Select the site(es) and use *Add/Add All/remove/Remove All* to add or remove sites.
6. Select the date range.

Click **OK** to import instrument data.



4.8.4 Item Template Configuration

Item Template Configuration screen can be used to create and save a template containing item numbers (related to the device integrity) along with reference values.

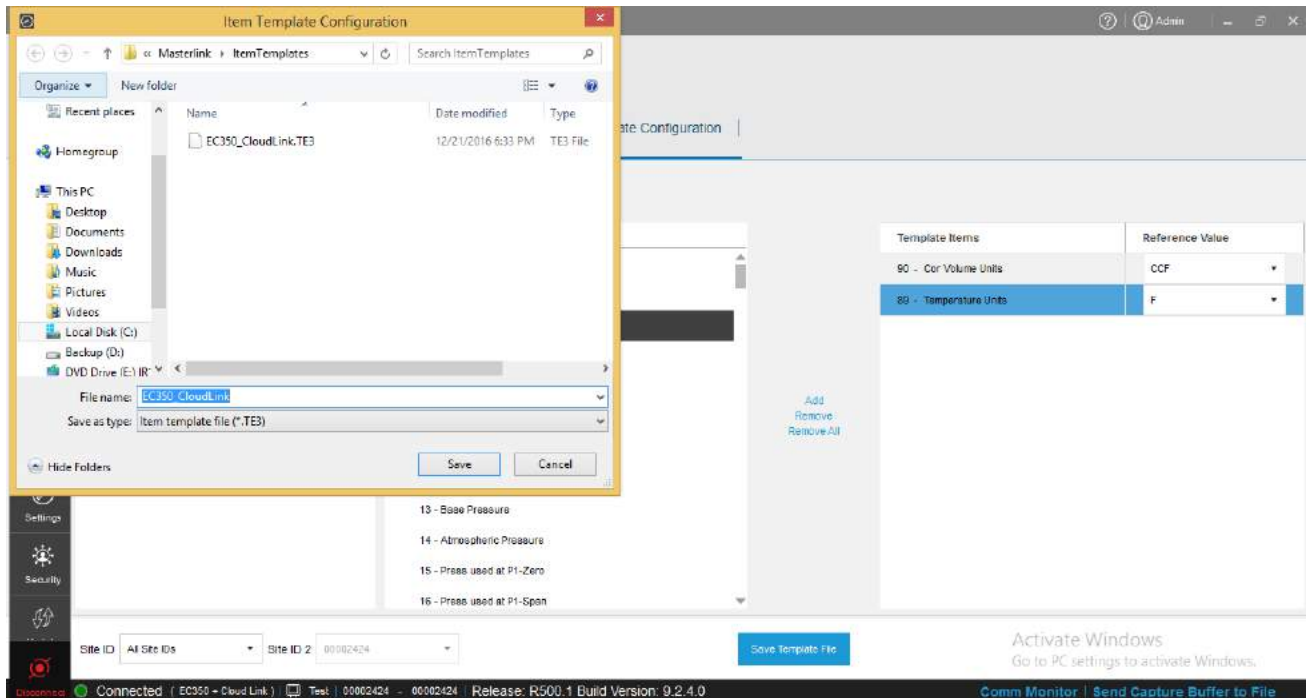


While MasterLink Software Application is connecting to an instrument, the values (default) from this template are compared with the values(actual) read from the instrument. If there is a mismatch, then an error is displayed on the *Dashboard - Config Check* widget, and drill down on the widget will display further details.

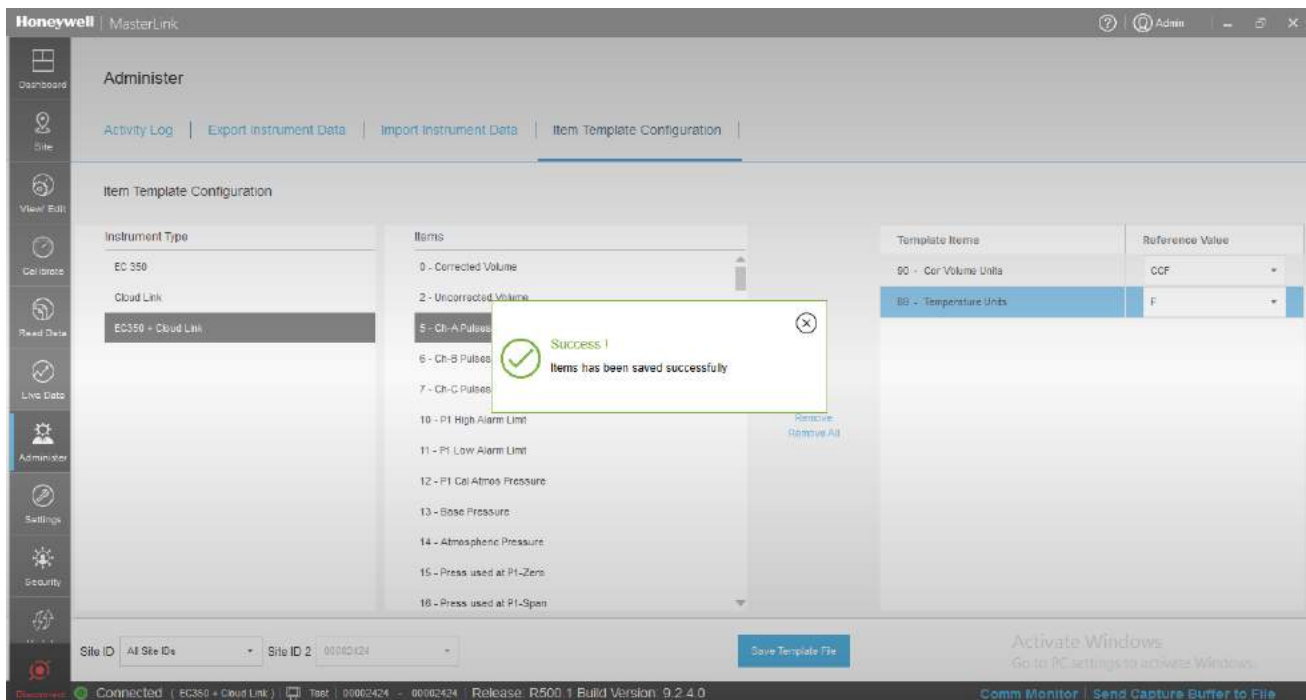
Refer [Dashboard Configuration check](#) for more details.

Start by selecting the instrument type. Based on the selected instrument type, the applicable items appear on the screen. Select and **Add** the required items to your list. Add a reference value for the selected items.

Click **Save Template File** to save a copy of the template that you just created.



Note: By default, instrument specific Item Templates are created (EC 350.TE3, Cloud Link.TE3, EC350_CloudLink.TE3). Use the Site ID 1 and Site ID 2 fields to create site specific Item templates. The item template files are named as <SiteID1>_<SiteID2>.TE3 file. Ensure that the file is saved in C:\ProgramData\Honeywell\MasterLink Software Application\ItemTemplates folder.



4.9 Settings

Related topics:

[Communications Setup](#)

[Time-Sync Properties](#)

[Auto Download Settings](#)

4.9.1 Communications Setup

The 'Communications Setup' tab can be used to define the relevant communication settings required for connecting to the instrument.

The screenshot shows the 'Communications Setup' tab in the Honeywell MasterLink software. The interface is divided into three main sections, each with its own set of configuration options:

- Serial Port Connection:** Includes fields for 'Connector' (set to COM3) and 'Baud Rate' (set to 9600). There is also a checkbox for 'IrDA' which is currently unchecked.
- Modem Connection:** Includes fields for 'Connector' and 'Baud Rate'. It also has fields for 'Modem Init String' and 'Dial Prefix'. Below these are 'Modem Type' (set to Standard_Hayes_Compat) and 'Dial Type' (set to Tone).
- Special Connection:** Includes fields for 'Connector' and 'Baud Rate'. It also has fields for 'Special Init String' and 'Dial Prefix'.

At the bottom of the window, there is an 'OK' button and a status bar showing connection status (Connected), device name (EC 350), and release/build information.

Communication settings can be defined for:

- Serial Port
- Modem
- Special Connectivity option

Serial Port Connection type connects the PC directly to the instrument using a serial cable. Follow the steps to communicate using a serial port connection:

1. **Connector:** Select the COM port
2. **Baud Rate:** Select the applicable baud rate from the drop down list.
3. **IrDA:** Check IrDA only for IR communication and uncheck for serial communication

Modem Connection type connects the PC to a Hayes modem using POTS (plain old telephone service) to another Hayes modem then to the instrument. Follow the steps to communicate using a modem connection:

1. **Connector:** Select the COM port
2. **Baud Rate:** Select the applicable baud rate from the drop down list.

3. **Dial Prefix:** If required, enter a dial prefix. These characters will precede the site list phone number in the site list. This is commonly used to access an outside line (9,) or on a portable computer, to temporarily enter an area code without modifying the site list.
4. **Modem Type:** Select either **Standard Hayes Compatible** (default) or the **Racal Radio Pad** from the drop down list.
5. **Dial Type:** Select either **Tone** (default) or **Pulse** from the drop down list.
6. **Modem Init String:** Enter the modem initialization string. This string is modem specific.

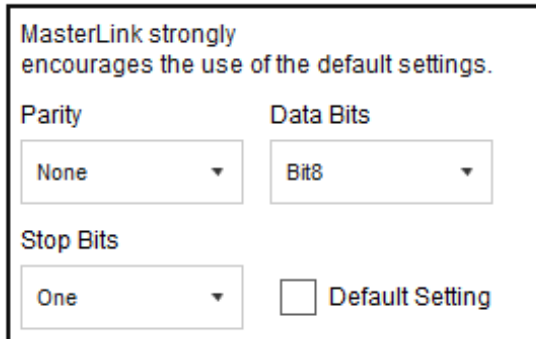
Note: Please note that a description of the modem configuration settings are detailed in the operation manual that was supplied with modem. Please refer to modem manual and find the command that turns off error control. This command, following the command to reset the modem to factory defaults, is usually all that is needed for the modem initialization string.

Attention: For Racal Radio Pad configuration, set the Modem Init String to: **&FQ0E0V0S0=0S12=0X0**

Special Connection type can be used to support standard modems (i.e., a second standard modem), which may have special configuration requirements. In addition, they can support some models of wireless TCP/IP modems (CDPD modems for example.) They are connections that have modems on both the PC (host) and instrument ends. Follow the steps to communicate using a modem connection:

1. **Connector:** Select the COM port
2. **Baud Rate:** Select the applicable baud rate from the drop down list.
3. **Dial Prefix:** If required, enter a dial prefix. These characters will precede the site list phone number in the site list. This is commonly used to access an outside line (9,) or on a portable computer, to temporarily enter an area code without modifying the site list.
4. **Special Init String:** Select the special initialization string from the drop down list.

Click **Advanced Setup** to use default settings. These are additional settings used for serial connection for all Honeywell devices. If required, change these values to establish communication with 3rd Party devices.



MasterLink strongly encourages the use of the default settings.

Parity: None ▼

Data Bits: Bit8 ▼

Stop Bits: One ▼

☐ Default Setting

The default settings will be automatically read and entered. Click on each of the drop-down boxes and select a choice from those lists.

The **Default Setting** check box will reset the parity, data bits, and stop bits to their original configuration.

Note: Please note that more description of the modem configuration settings are detailed in the operation manual that should have been supplied with modem.

After configuring the communications settings, click **OK** to save the changes.

4.9.2 Time-Sync Properties

'Time-Sync Properties' tab can be used to configure the Time Sync settings. The Time Sync function is used to synchronize instrument time with host time.

The screenshot shows the Honeywell MasterLink software interface. The 'Settings' tab is active, and the 'Time-Sync Properties' sub-tab is selected. The interface includes a sidebar with various function icons. The main configuration area is divided into three sections, each highlighted with a red box and a numbered callout (1, 2, and 3). Section 1 contains the 'Enable Time-Sync function' checkbox. Section 2 contains the 'Instrument DST Compensation Options' with radio buttons for 'Standard Time' and 'DST'. Section 3 contains the 'Time Difference Trigger Point' with input fields for hours (HH), minutes (MM), and seconds (SS). An 'OK' button is located at the bottom right of the configuration area. The bottom status bar displays connection status, device name, and version information.

To configure Time Sync properties:

1. Check **Enable Time-Sync function**
2. Select either **Standard Time** or **DST**.
3. View or modify **Time Difference Trigger Point**. A Time Sync will be triggered based on the time difference configured in this field.

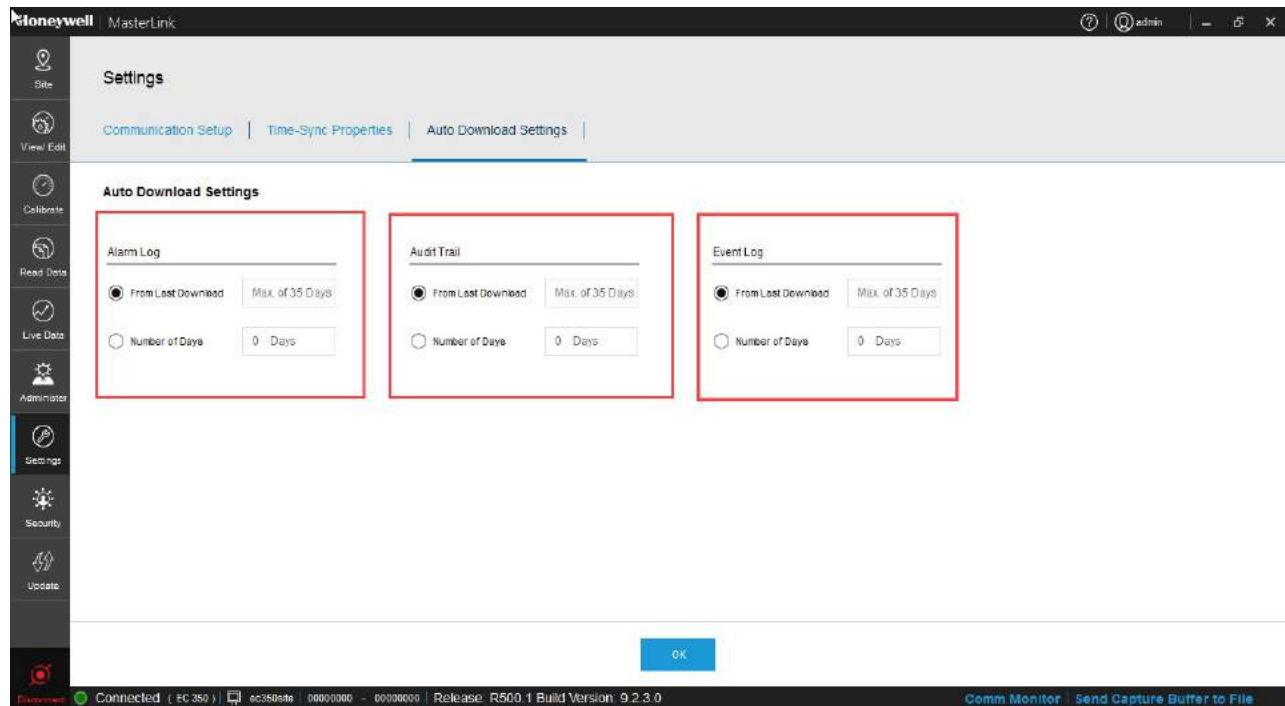
Click **OK** to save the changes.

Note: It is recommended that for any change in settings, you need to disconnect and then reconnect the instrument, for the settings to take effect. You can verify time-sync from the dashboard.

4.9.3 Auto Download Settings

The 'Auto Download Settings' tab is used to configure the number of days for which dashboard data is loaded.

Note: It is applicable only for Dashboard data.



Edit or modify the auto download settings for the following logs:

- Alarm
- Audit Trail
- Event

Check either **From Last Download** or **Number of Days** , enter the number of days and then click **OK**.

Note: Configure the Number of days as 0 to disable auto download of logs on dashboard.

4.10 Security and User Management

MasterLink supports a role based access control mechanism. A MasterLink administrator can create roles and assign permissions to the role. The administrator can then create users and assign roles to users. With this role based access mechanism, user is restricted to the operations that are associated with assigned role. This is a mechanism used to control access to different MasterLink operations.

User Management enables the utilities to secure the access to different MasterLink functionalities by its Technicians / operators. This should not be confused with the User Table functionality as User Table helps to manage access to device functionalities.

User Management is typically an administrative function. It allows an Administrator to

- Create Users who could log into MasterLink application
- Restrict the user's operation capabilities by assigning roles with specific privileges
- Group different operational privileges in terms of roles.

A role defines a set of permissions that are assigned to a user, which allow them to perform a set of actions. Example of a role could be "Level 1 Technician" who can only read information from the device using MasterLink and a "Level 2 Technician" who can read and write information. The created roles can then be assigned to different users needing similar access privileges.

Related topics:

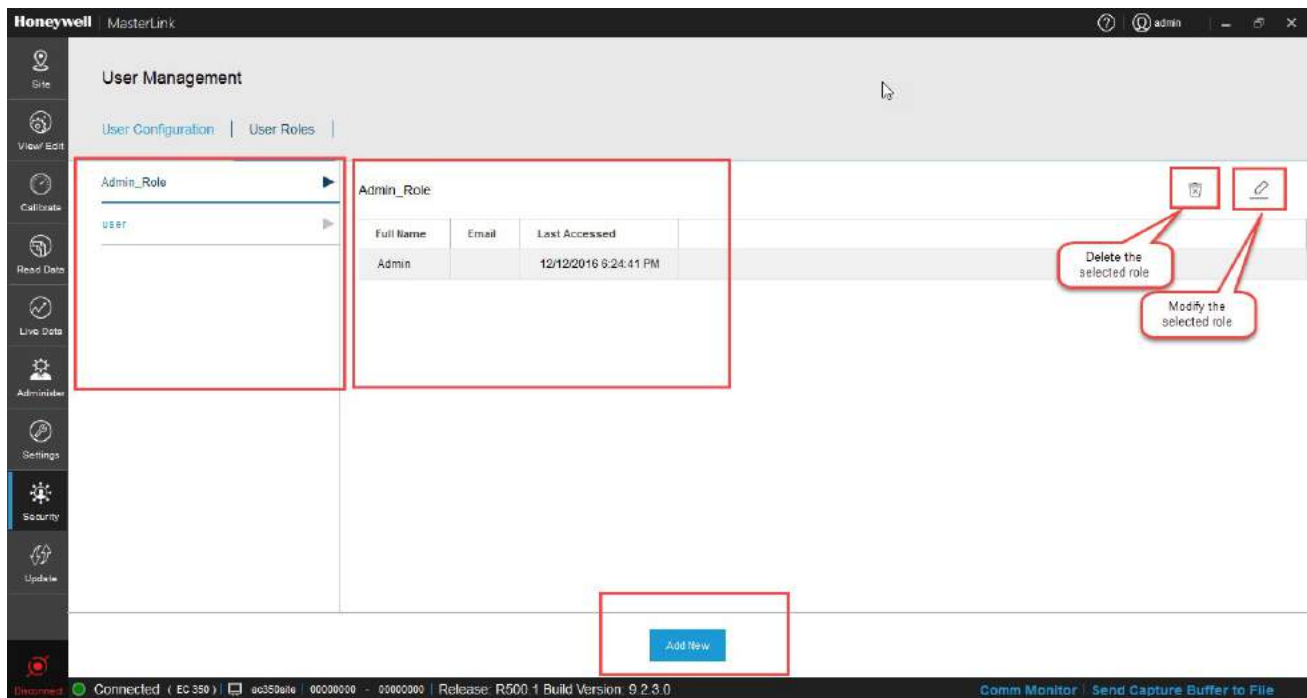
[User Configuration](#)

[User Roles](#)

4.10.1 User Roles

A role is a collection of permissions that defines a function, such as the Administrator or a Field Service Engineer. Users who are placed in this role will inherit these permissions. Roles are created by users (usually administrators) and are used to group together privileges or other roles. They are a means of facilitating the granting of multiple privileges or roles to users.

On the 'User Roles' screen, you can view a list of all the roles configured in the system, and the list of users assigned to a selected role.



To create a new role:

1. On the 'User Roles' screen, click **Add New**.
2. Type the name and description of the role.
3. Select the check-box next to a privilege to assign it to the current role.
4. Click **Save**.

The screenshot shows the 'User Management' window with the 'User Roles' tab selected. The 'User Role' field contains 'test' and the 'Role Description' field is empty. There are four columns of privileges, each with a list of actions and checkboxes. The 'Configuration' column has 'Write Items', 'Send Item File', 'Send Log Configuration' (checked), and 'Send User Table'. The 'Calibration' column has 'Calibration'. The 'Firmware Download' column has 'Firmware Download' (checked). The 'Administer' column has 'Shut Down Device', 'Generate Reports', 'Administer Data' (checked), 'Edit Audit Trail', and 'User Management'. At the bottom, there are 'Save' and 'Discard' buttons. The status bar at the very bottom shows 'Connected' and 'Comm Monitor'.


The new role will appear in the list of roles on the 'User Roles' screen.


The following table explains the different privileges that can be assigned to a role:

Privilege	Description
Write Items	Allows users to update item values in the devices
Send Item File	Allows users to update device configuration using item files
Send Log Configuration	Allows users to update log configuration of the device
Send User Table	Allows users to update user access codes specific to the device
Calibration	Allows users to perform tempearture and pressure calibration
Firmware Download	Allows users to perform firmware upgrades
Shut Down Device	Allows users to shut down field devices
Generate Reports	Allows users to generate MaterLink reports
Administer data	Allows users to import and export device data into the database

Privilege	Description
Edit Audit Trail	Allows users to modify the Audit Trail data
User Management	Allows users to create and modify user accounts and roles.

You can edit or delete an existing role.

To edit a role, select the role from the list of roles, and then click  on the top-right corner of the screen. You can then edit the role name, the description, and the role privileges.

To delete a role, select the role from the list of roles and then click  on the top-right corner of the screen.

4.10.2 User Configuration

The 'User Configuration' screen shows a list of all existing MasterLink users and this screen also allows you to create new MasterLink users.

Attention: Before creating a new user, ensure that you have already created a user role, and necessary permissions are assigned to that role. To learn more about creating a new role, refer to the section on [Creating User Roles](#).

To create a new user:

1. On the 'User Configuration' screen, click **Add New**.
2. Type the user name of the new user.
3. Select a role from the **Assigned Role** drop-down list. Roles configured in the [User Roles](#) tab, appear in this drop-down list. If you need to change permissions assigned to this role, or if you need to create a new role, then you can make the required changes in the [User Roles](#) tab.
4. Type a password for the user account, and then re-type it to confirm the password.
5. Click **Save**.

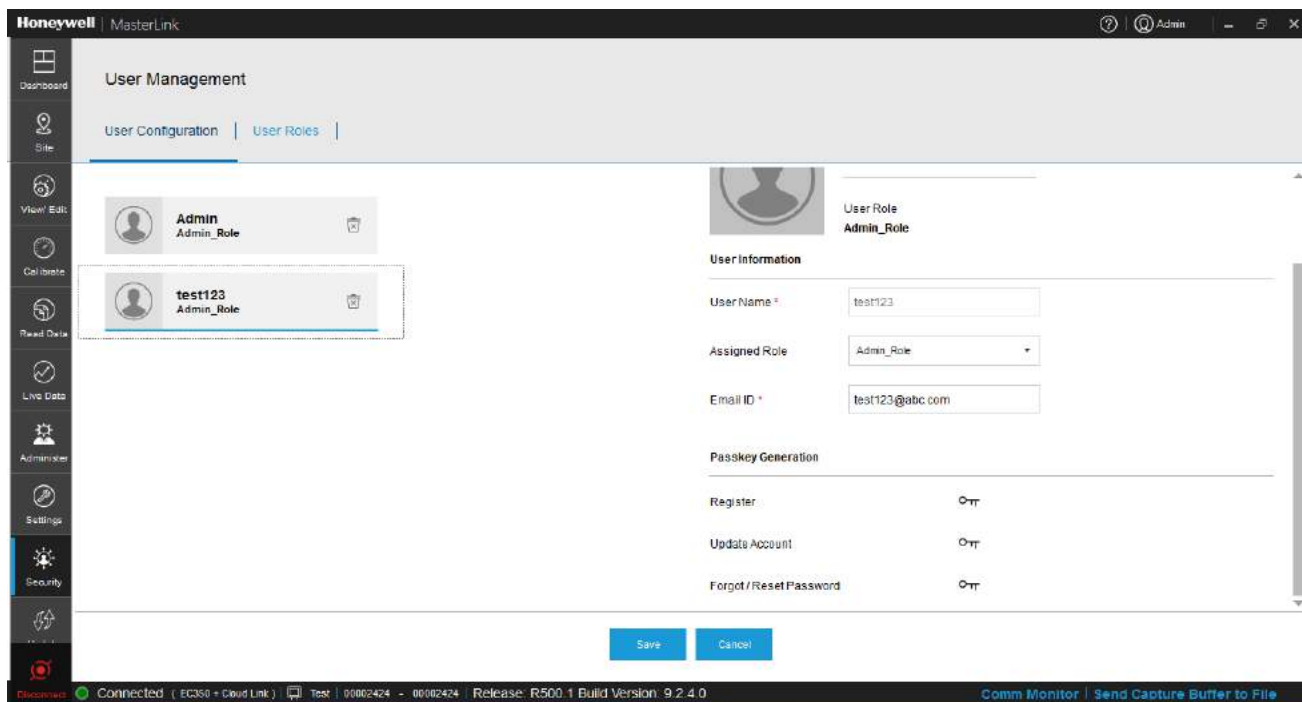
The screenshot displays the Honeywell MasterLink User Management interface. The top navigation bar includes 'Dashboard', 'Site', 'View/ Edit', 'Calibrate', 'Read Data', 'Live Data', 'Administer', 'Settings', and 'Security'. The 'User Management' section is active, with tabs for 'User Configuration' and 'User Roles'. The 'Add New User' form is shown, featuring a user profile icon on the left. The form is divided into two main sections: 'User Information' and 'Password Information'. Under 'User Information', there are fields for 'User Name *' (containing 'test123'), 'Assigned Role' (a dropdown menu showing 'Admin_Role'), and 'Email ID *' (containing 'test123@abc.com'). Under 'Password Information', there are fields for 'Password *' and 'Confirm Password *', both containing masked passwords. A 'Generate Licence File' button is located below the 'User Information' section. At the bottom of the form, there are 'Save' and 'Discard' buttons. The status bar at the very bottom shows 'Disconnected', 'Connected (EC350 + Cloud Link)', 'Test', '00002424 - 00002424', 'Release: R500.1 Build Version: 9.2.4.0', and 'Comm Monitor | Send Capture Buffer to File'.

The newly created user is added to the list of users.

4.10.2.1 Passkey Generation

A Passkey contains encrypted information of user name and privileges. For a user to be effected in other MasterLink instances a Passkey needs to be generated by the Administrator and sent to the user. The site Administrator can create the following passkey files:

- **User Registration** - This is used to create license files to allow new users to register to the MasterLink application.
- **Update Account** - This is to change privileges of an existing user. Privileges can be added/removed based on the business requirement.
- **Forgot Password** - If a user forgets their password, site administrator can create passkey files allowing users to reset their password.



To generate a passkey:

1. On the User Configuration screen, select a user account to view details of the user.
2. Under Passkey Generation, click on the key icon next to the activity. You can generate the following keys:
 - **Register**: A key to register a new MasterLink user
 - **Update Account**: A key to update an existing MasterLink user account.
 - **Forgot/Reset Password**: A key to reset a forgotten or lost password.

3. Browse and select a location to save the passkey.
4. Send the passkey as an attachment to the user through an email.

The screenshot displays the 'User Management' interface. At the top, there is a user profile section with a placeholder icon and the text 'User Role Tech'. Below this is the 'User Information' section, which includes three fields: 'User Name *' with the value 'James', 'Assigned Role' with a dropdown menu set to 'Tech', and 'Email ID *' with the value 'James@honeywell.com'. A red rectangular box highlights the 'Passkey Generation' section, which contains three radio button options: 'Register', 'Update Account', and 'Forgot / Reset Password'. Below the 'Passkey Generation' section is a 'User Configuration' dialog box. This dialog box shows a file explorer view with the path 'Honeywell > Masterlink > LicenseFiles'. The 'File name' field is set to 'James_passkey' and the 'Save as type' is set to 'PasskeyFile (*.MLK)'. The 'Save' button is highlighted.

User Role
Tech

User Information

User Name * James

Assigned Role Tech

Email ID * James@honeywell.com

Passkey Generation

Register ☐

Update Account ☐

Forgot / Reset Password ☐

User Configuration

Honeywell > Masterlink > LicenseFiles

File name: James_passkey

Save as type: PasskeyFile (*.MLK)

Save Cancel

5 Update

You can use MasterLink Software Application to update the EVC or Modem firmware, and can also load the instrument with security certificates. This chapter describes the process of updating field instrument firmwares and loading security certificates.

Related Topics:

[EVC Firmware Update](#)

[Modem Firmware Update](#)

[Certificate Update](#)

5.1 EVC Firmware Update

You can use MasterLink Software Application to upgrade EVC firmware.

To get started, browse and select the firmware file.

The screenshot shows the Honeywell MasterLink R500.1 software interface. The main window is titled "Update" and displays the "EVC 1.1032" tab. The interface includes a sidebar with navigation options: Site, View/Edit, Call Logs, Read Data, Live Data, Administrator, Settings, Security, and Update (which is currently selected). The main content area is divided into several sections:

- Firmware Filename:** A text field containing "File Location" and a "Browse" button.
- Versions:** A section with "Current Firmware" (1.1032) and "Loader" (3.1000).
- Selected Firmware Details:** A section with "Firmware Type" and "New Firmware" fields.
- Step and Status Table:** A table with two columns: "Step" and "Status". The steps listed are "Validate FW file", "Send Firmware", "Validate Firmware", and "Sync date and time".
- Buttons:** "Start Upgrade" and "Reset" buttons are located at the bottom of the main content area.
- Status Bar:** At the bottom of the window, it shows "Connected (EC 350)", "Site 045", and "11111111-22222222".

Click **Start Upgrade** to upgrade the EVC firmware. As the firmware upgrade progresses, you can observe the status on the right pane.

5.2 Modem Firmware Update

You can use MasterLink Software Application to upgrade modem firmware.

To get started, browse and select the firmware file.

The screenshot displays the Honeywell MasterLink R500.1 software interface. The left sidebar contains navigation icons for Site, View/Edit, Call Logs, Read Data, Live Data, Administrator, Settings, Security, and Update (which is currently selected). The main window is titled 'Update' and has three tabs: EVC, Modem, and Certificate. The 'Modem' tab is active. In the center, there is a section for 'Firmware Filename' with a text box containing 'File Location' and a 'Browse' button. Below this, there are two sections: 'Versions' with 'Current Firmware' and 'New Firmware' text boxes, and 'Selected Firmware Details' which is currently empty. On the right side, there is a table with two columns: 'Step' and 'Status'. The table contains four rows: 'Validate Firmware', 'Send Firmware', 'Validate Firmware', and 'Sync date and time'. At the bottom of the main window, there are 'Back to upgrade' and 'Reset' buttons. The bottom status bar shows 'Connected (EC 350)', 'Site 045', and the phone number '11111111-22222222'. On the far right of the status bar, there are links for 'Comm Monitor' and 'Send Capture Buffer to File'.

Step	Status
Validate Firmware	
Send Firmware	
Validate Firmware	
Sync date and time	

Click **Start Upgrade** to upgrade the Modem firmware. As the firmware upgrade progresses, you can observe the status on the right pane.

5.3 Upload Certificate

This tab is enabled if application is connected to EC 350 MasterLink Software Application R500.1 or integrated EC 350.

To enable SSL communication, **Security Enable** check box under certificate tab must be checked. Then upload a valid security certificate to the MasterLink Software Application R500.1 and host. These certificates can be self-signed or signed by a third party.

The screenshot displays the Honeywell MasterLink R500.1 software interface. The 'Update' tab is active, and the 'Certificate' sub-tab is selected. The 'Security Enable' checkbox is checked. The 'Start Date' is set to 9/15/2016 and the 'End Date' is set to 9/15/2017. The 'Certificate Type' dropdown menu is set to 'Client Certificate'. The 'Certificate File Name' field is empty, and the 'Browse' button is visible. A table on the right shows the steps: 'Validate Certificate File', 'Send Certificate', and 'Validate Certificate', all with empty status columns. The bottom status bar shows 'Connected (EC 350)' and 'Site 045'.

Select the certificate type from the dropdown.

Browse and select a certificate file.

The certificate can be a:

- Client Certificate,
- Server Certificate,
- Private Key, or
- Ca Certificate

Click **Update** to send the certificate to the instrument.

Loading certificates to a MasterLink Software Application R500.1

Note: It is Mandatory to load security certificates to Cloud Link using Serial interface. Renewal of certificates can be done using any of the supported interfaces.

1. The following order to must be followed to load certificates to Cloud Link:

- Key Certificate
- Client Certificate
- Server Certificate
- CA certificate

1. Configure SSL private key in Cloud Link (Item Number: 3086)

2. Enable SSL in Cloud Link (Item Number: 3017)

3. Restart Cloud Link

4. Make sure that Time Sync is applied after restart of Cloud Link. This step is not required if SIM card with static IP address is used.

5. Add/Edit site as IPv4 with SSL enable as shown in below screen.

Note: The IP address and the port number can vary based on the customer network settings.

6. Configure SSL Private Key. This key should match the one configured in Cloud Link (Item Number: 3086)

7. Configure IP address and port number.

Internet/Phone	IPv4
	<input type="checkbox"/> UDP <input checked="" type="checkbox"/> SSL
SSL Private Key	*****
Site Phone/IP Address *	192.168.1.1 : 40000

Note: Place the certificates (CA, Client and Private Key file) in *C:\ProgramData\Honeywell\MasterLink Software Application\Certificates*. Certificate names should match with following naming convention:

CA Certificate Siteld1_Siteld2_ca.pem

Client Certificate Siteld1_Siteld2_clientcertificate.pem

Private Key file Siteld1_Siteld2_keyfile.pfx

CHAPTER 6

6 Troubleshooting scenarios

Scenario	001
Problem	MasterLink Software Application stops communication with EVC over IrDA though Link is connected.
Environment	All OS
Resolution	Remove IrDA link and connect back.

Scenario	002
Problem	Connection fails over serial.
Environment	All OS
Resolution	<ul style="list-style-type: none">▪ It could be mismatch of baud rate of MasterLink Software Application and device.▪ It could be mismatch of comm port selection.

Scenario	003
Problem	Load graph button is disabled when a user is connected to the site.
Environment	All OS
Resolution	Disconnect the instrument to activate the Load Graph button.

Scenario	004
Problem	User is unable to view certain dash board and Instrument data when connected to Android mobiles.
Environment	All OS
Resolution	Double tap the item to view the details.

Scenario	005
Problem	Application does not display device ID in "Add/Pair tab of MasterLink Software Application Android application once instrument session is timed out .
Environment	All OS
Resolution	Use Site Management screen to connect to the device.

Scenario	006
Problem	Application does not display device ID in "Add/Pair tab of MasterLink Software Application Android application once instrument session is timed out .
Environment	All OS
Resolution	Use Site Management screen to connect to the device.

Scenario	007
Problem	Item value/description is not completely visible in the Dashboard/Configure by Group screens.
Environment	All OS
Resolution	Tap the item value field to view the data

Scenario	008
Problem	User is unable to abort send log configuration file transfer.
Environment	All OS
Resolution	The transfer would be completed in a minute. Please wait till the operation is done.

Scenario	009
Problem	Sometimes site id's are duplicated in Add/Pair site screen.

Environment	iOS and Android
Resolution	<p>This issue usually happens if site ID's Cloud Link 4G Modem are changed after an instrument is paired with the mobile. Advised to not to change the site IDs of Cloud Link 4G Modem once they are installed in the field.</p> <p>To resolve the issue:</p> <ol style="list-style-type: none"> 1. Download any Bluetooth Low Energy app from App Store / Play Store 2. Scan for Cloud Link 3. Still you can see the Cloud Link site id as previous names. 4. Try to connect the Cloud Link 5. Scan once again. You will able to see new site id's 6. Now connect from MasterLink Software Application

Scenario	010
Problem	In TCP/IP connection, the device is not responding
Environment	All OS
Resolution	Then check the session timeout. By default the item is set to 30 seconds. Increase the session timeout.

Scenario	011
Problem	Device connectivity issue after a application is force closed or hanged
Environment	All OS
Resolution	If the device is not connecting, wait for 10-15 minutes until the communication session timeout of Cloud Link expires.

7 Glossary

A

Activity Log

This function is used to quickly view the Activity Log on screen. Please note that this log is different from the Event Log because this log mainly focuses on software activity (and some firmware activity) where the Event Log function records activity that is directly linked to and maintained within the instrument.

Alarm Log

The alarm log contains descriptions of all significant problems detected by the system

Audit Trail

You can use the 'Audit Trail' tab to view and download Audit Trail data from the instrument. The term "Audit Trail" has different meanings in MasterLink Software Application that depend on the type of connected instrument.

D

DBO

Database Owner. dbo is the default schema in SQL Server. You can create your own schemas to allow you to better manage your object namespace.

Diagnostic log report

Displays log files containing messages that record all types of events, including startup and shutdown information, errors, warning messages, and access information

E

Event Log

The Event Log records activity that is directly linked to and maintained within the instrument.

I

Item File

An Item File stores the current instrument's item code values on your computer in a file.

Item Report

Displays comprehensive information for items

K

key

Passkey generated by the site Administrator

L

Load Graph

Loads saved graphs when offline

Log trigger

A log trigger is an action that caused a record to be written to the audit trail log in the instrument.

S

Serial port

Port of your system to which the device is connected

Short List

A Short List is the same as the standard Item List (stores the current instrument's item code values), except that you can customize it.

Site Report

Displays the number of workers/employees and work equipment at the construction site

SSL

SSL (Secure Sockets Layer) is the standard security technology for establishing an encrypted link between a web server and a browser. This link ensures that all data passed between the web server and browsers remain private and integral.