

OMC System Software

**GrayScreen
User Manual**

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Symbol Definition	
	WARNING: Indicates information that a potentially hazardous situation which, if not avoided, could result in serious injury or death.
	RISK OF ELECTRICAL SHOCK: Indicates information that Potential shock hazard where HAZARDOUS LIVE voltages greater than 30V RMS, 42.4V peak, or 60V DC may be accessible.
	ESD HAZARD: Indicates information that Danger of an electro-static discharge to which equipment may be sensitive. Observe precautions for handling electrostatic sensitive devices
	ATTENTION: Identifies information that requires special consideration.
	TIP: Identifies advice or hints for the user.

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GrayScreen User Manual

Section 1 Software Overview

GrayScreen Management is an innovative software designed to elevate the operational safety of SUPCON DCS operation stations.

With GrayScreen, you can enhance the operation efficiency and safety by locking the monitors in the absence of alarms or manual operations (no mouse/keyboard actions).

This cutting-edge software can be easily turned on either manually or set to automatically run during computer startup, providing users with a hassle-free experience. Once activated, GrayScreen operates in the background without interfering with your monitoring operations, ensuring uninterrupted productivity.



Tip:

If the GrayScreen component is licensed, but the dongle is not detected, upgrade the dongle driver and try again.

Section 2 Starting GrayScreen

1) Select **OMC > Intelligent Application Management** from the Start menu, to bring up the login window.

Enter the username and password that are consistent with the privilege user of OMC High-performanceHMI.

2) After logged in, select **Gray Screen** in the left navigation tree of the main interface to display the configuration pane shown in the following figure.


After enabling GrayScreen,  will be displayed in the system tray.



Tip:

After enabling this component, to exit it, right-click  in the system tray and click Exit from the contextual menu.

Section 3 Software Settings

Right-click the GrayScreen icon () from the system tray and select **Settings** from the contextual menu. The settings window is shown in Figure 3-1. The options include Basic Settings, Alarm Rules, HMI Option, Screen Lock Action, and OPC Access.

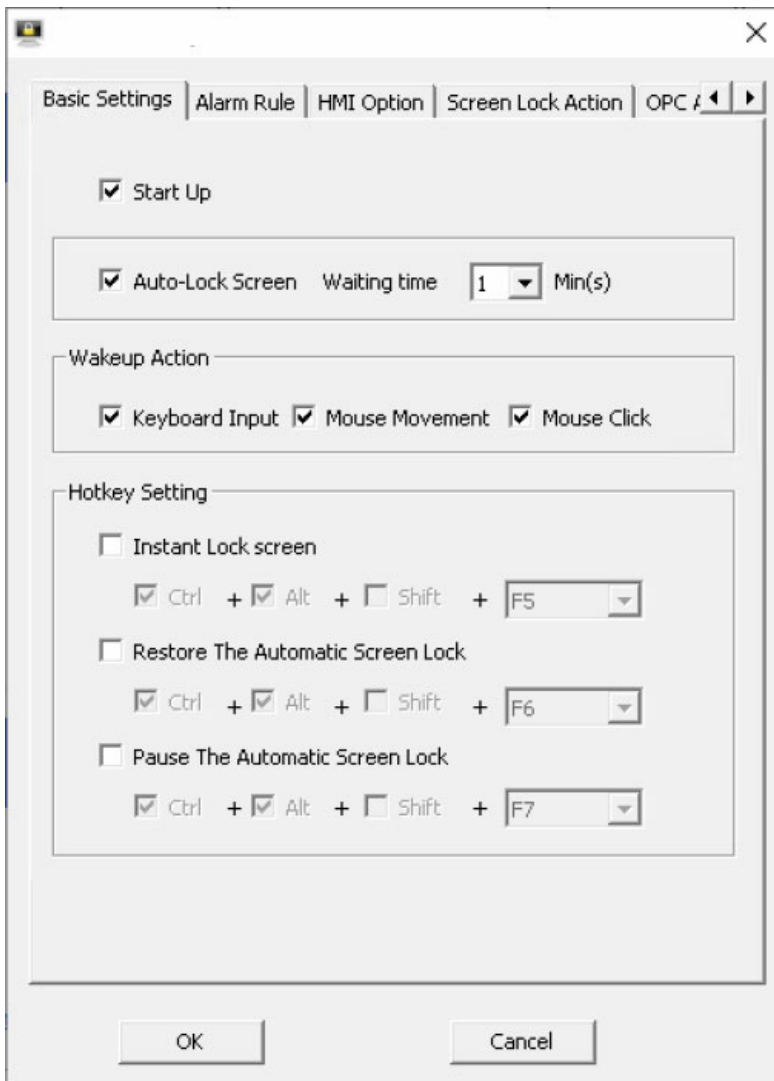


Figure 3-1 GrayScreen Settings

3.1 Basic Settings

In the Basic Settings tab, you can configure the basic properties of GrayScreen, as shown in the previous figure.

- Start Up

When checked, the component will automatically run at system startup.

- Auto-Lock Screen

When checked, alarms and mouse/keyboard actions are detected and the monitor locks automatically when there is no actions or alarms.

- Waiting time

Enter a value between 1 and 10 minutes. If no alarms and mouse/keyboard actions are detected for the specified time, the monitor enters gray screen status.

- Wakeup Action

Exit the lock status by the enabled actions.

- Hotkey Setting

Instant Lock Screen: when pressing the key combination, the monitor enters the gray screen status if conditions are met; if the automatic screen lock is paused, press the combination to restore the automatic screen lock.

Pause the Automatic Screen Lock: press the key combination so that the monitor does not enter the gray screen status automatically.

Restore the Automatic Screen Lock: press to resume the automatic screen lock.

When setting the hotkeys, avoid conflicts with the operator keyboard.

3.2 Alarm Rule



Figure 3-2 Alarm rule

- **Ignore Confirmed Alarm**
When selected, alarms have been acknowledged will have no effect on entering and exiting the gray screen status.
- **Ignore System Alarm**
When selected, system alarms does not affect entering and exiting from the gray screen status.
- **Process Alarm Black and White List Settings**
When enabled, ignore the process alarms in the blacklist, and detect only process alarms in the white list.

3.3 HMI Option

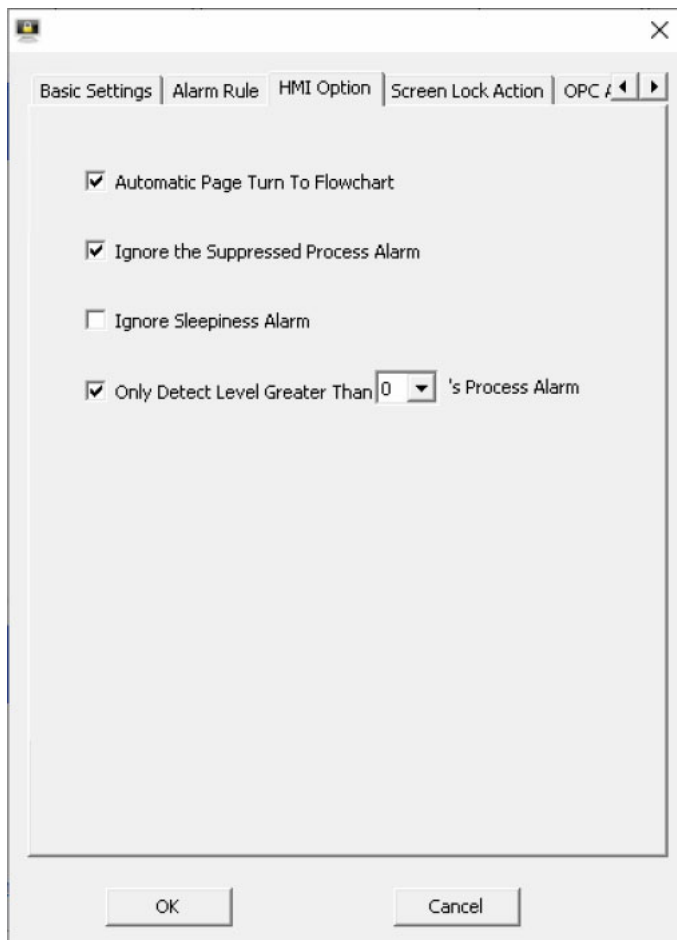


Figure 3-3 HMI Option

The HMI option is only available when the GrayScreen component is used with High-performanceHMI.

- Automatic Page Turn to Flowchart
When selected, automatically turn to the graphic of first alarm tag that causes the exit from gray screen status (if any).
- Ignore the Suppressed Process Alarm
When selected, the suppressed process alarms does not affect entering and exiting from the gray screen status.
- Ignore Sleepiness Alarm
When selected, latching alarms does not affect entering and exiting from the gray screen status.
- Only Detect Level Greater Than X's Process Alarm
When selected, the process alarms of level X or level less than X do not affect entering and exiting from the gray screen status.

3.4 Screen Lock Action

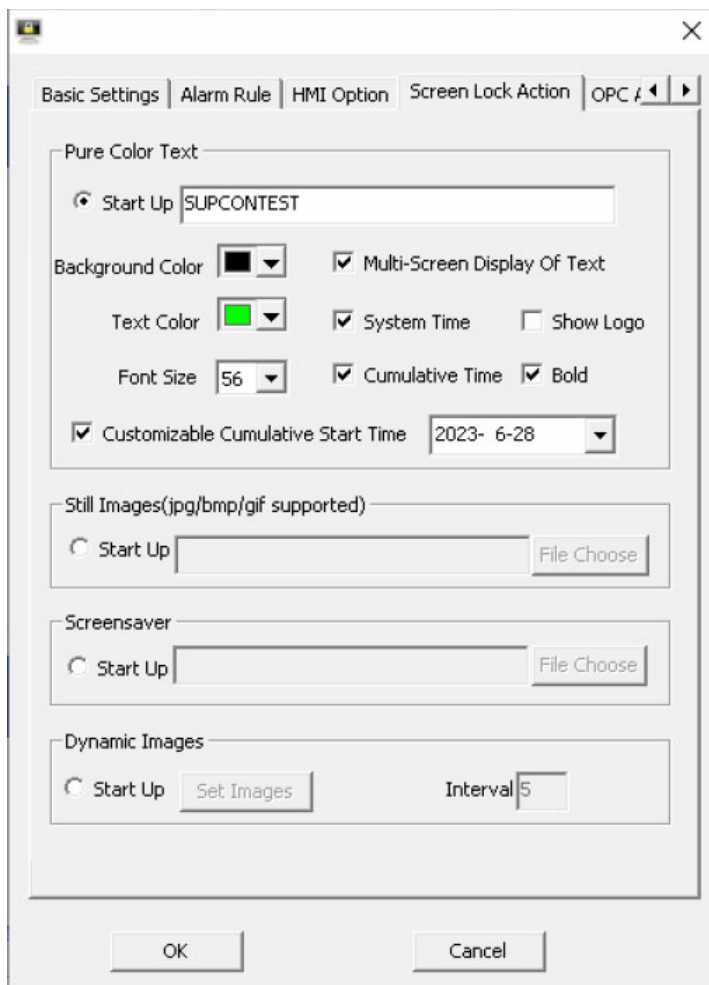


Figure 3-4 Screen Lock Action

Four modes for gray screen status are provided: pure-color text, still images, screensaver, and dynamic images.

- **Pure Color Text**
In gray screen status, the monitor displays the background color and the text is centered. You can set options such as text, background color, text color, font size, bold text, multi-screen display, duration, system time, cumulative time, logo, and more.
- **Still Image**
In gray screen status, the monitor displays the set image. Select an image for display.
- **Screensaver**
Run screensaver program in gray screen status. Select a screensaver program.
- **Dynamic Image**
The selected images are played in a loop at a set interval. You can set up to 8 images with a loop interval from 1 to 500 seconds.

3.5 OPC Access

Figure 3-5 OPC Access settings

OPC Access should be configured when the component is used in conjunction with third-party DCS/PLC systems. It supports both OPC AE and OPC DA modes. OPC AE: used to access systems that support OPC alarm & event service. OPC DA: used for systems that supports using a digital tag to represent whether the system has an alarm and supports OPC DA service to provide this tag.

- **OPC AE**

Select and connect with a specific OPC AE server to obtain alarm information. OPC AE is unable to obtain acknowledged alarm information regardless of the **Ignore Confirmed Alarm** field in **Alarm Rule**.

- **OPC DA**

Select and connect to the specified OPC DA server. Subscribe to the configured tags to determine if there is an alarm. In this point, alarm rules are ineffective.

- **Node**

The IP address of the server, which can be blank if it is the local computer.

- **OPC Service**

After entering the node information, click **Refresh** button to display a list of available OPC services for selection.

- **Type**

After selecting the OPC AE service, click **Type** button to select types of alarm event that activate the monitor and require users to handle. If not selected, all alarm types will cause the exit of gray screen status. Ignore Process Alarm is not valid for OPC AE; you can achieve this functionality by selecting the alarm types.

Section 5 Statistics Query by Administrator

5.1 Group Settings

Under the installation path ("C:\OMC\GrayScreen" by default), run "OMC GrayScreenManageCfg.exe" to bring up the dialog box shown in the following figure.

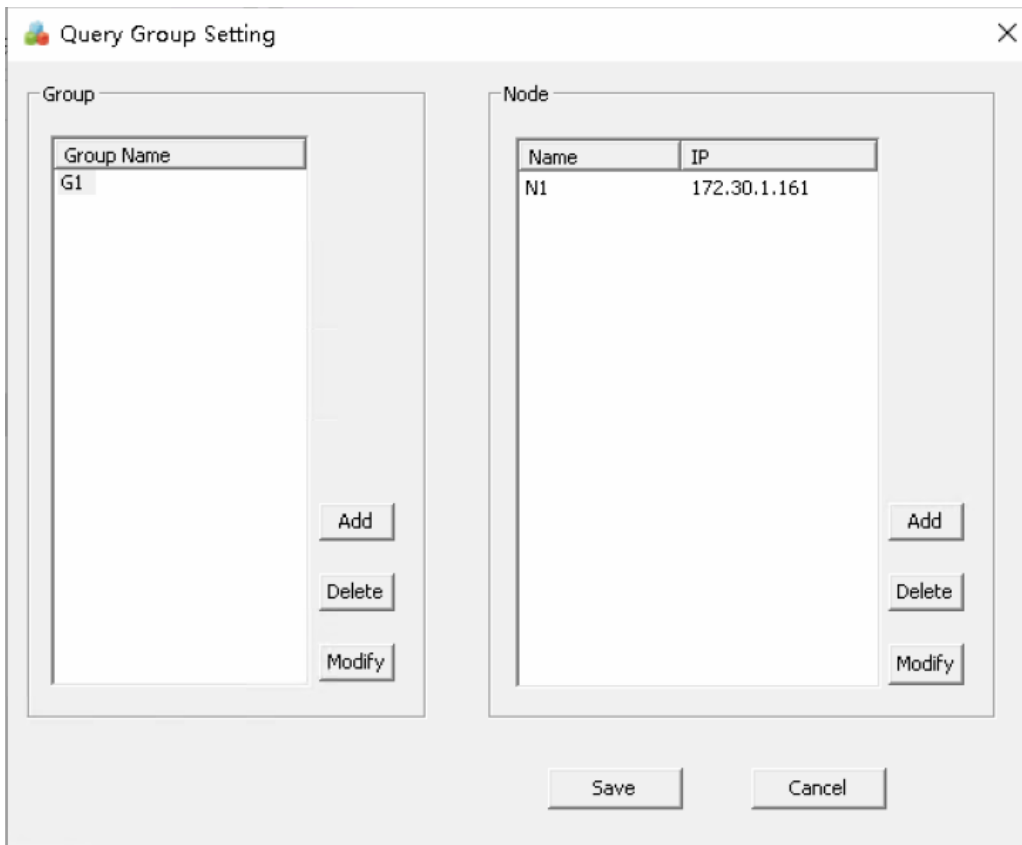


Figure 5-1 Group settings

Click the buttons in Group area to add, delete, or modify the group information.

Select a group, and click the **Add** button in Node area to add node information.

Click the buttons in Node area to delete/modify the node information.

5.2 Statistics Management

Under the installation path ("C:\OMC\GrayScreen" by default), run "OMC GrayScreenAdminView.exe".


Select the group and node information you want to query. The node list can optionally display the node name or address.

Supports query by type or time. Type includes mouse, keyboard, alarm, exit, and authority. The statistical results contain the following two parts:

- Statistics information: includes screensaver times, screensaver accumulated time, average screensaver time, and maximum screensaver time.
- Detailed Information: includes start time, end time, duration, exit type, exit reason and description.

In addition, the statistical results and details can be exported as a CSV file.

Section 6 Viewing System Information

Right-click the GrayScreen icon () from the system tray and click "System Information" from the contextual menu.

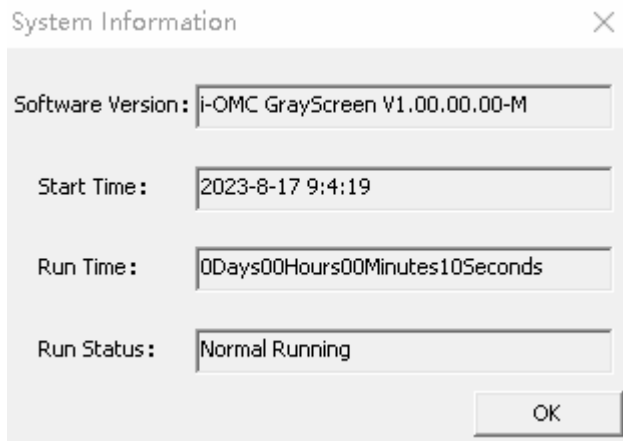


Figure6-1 System Information

Section 7 OPC Data Access

Statistics of GrayScreen can be sent to other computers in the form of OPC data.

7.1 Configuring Monitoring Node

To configure a node that can get the GrayScreen information:

- 1) Under the installation path ("C:\OMC\GrayScreen" by default), Open "OMC GrayScreenCfg.exe" to bring up the configuration dialog box shown in the following figure.

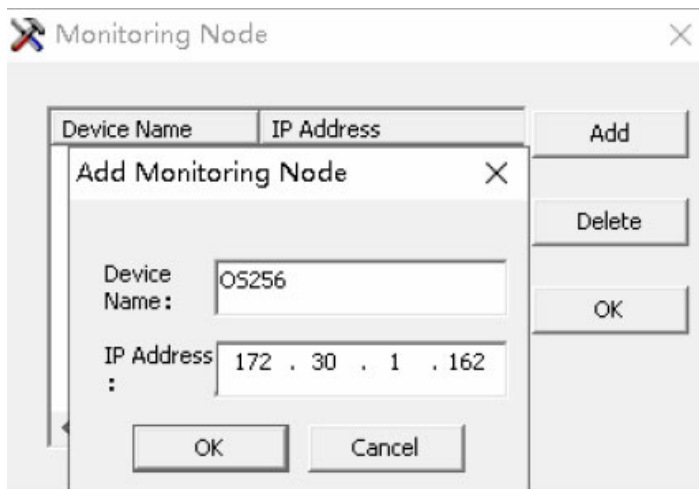


Figure 7-1 Monitoring node configuration window

- 2) Click **Add** in the dialog box to bring up the **Add Monitoring Node** dialog box.
- 3) In the **Add Monitoring Node** dialog box, configure the device name and IP address.

Click **OK** to save the changes. After changing the configurations, the computer needs to be restarted if this is not the first-time changing configurations.

7.2 Running OPC Service

Run OMC GrayScreenOPCServer.exe in the installation directory (C:\OMC\GrayScreen by default) to start the OPC service of this component. With this service, the statistics tags will be sent to the monitoring node configured in the previous step.

7.3 OPC Tag Meanings

The following table lists the tag names, meaning, etc. corresponding to information in the GrayScreen statistics.

Table 7-1 OPC tags information

Tag Name	Meaning	Data Type	Read/Wr ite	Descriptions
DAYSTART	Start Time	String	R/W	The recording of the longest daily gray screen period occurs 30 minutes after the time specified by the DAYSTART tag; DAYSTART defaults to 1:00:00, so the daily recording is triggered at 1:30:00. DAYSTART can be modified. Its format is "HH:mm:ss", where "HH" is hour (0-23), and "mm" is minute (0-59), "ss" is second (0-59).
STARTTM	Start Time of Gray Screen	String	Read Only	Indicates the start time of the longest daily gray screen period.
ENDTM	End Time of Gray Screen	String	Read Only	Indicates the end time of the longest daily gray screen period.
LASTTM	Duration of Gray Screen	String	Read Only	Indicates the duration of the longest daily gray screen period.
DATE	Start Date of Monthly Accumulated Gray Screen Period	String	Read/Wr ite	The start date of counting the monthly gray screen cumulative time. 1st by default. DATE must be an integer in the range of 1 to 28.
TOTALTM	Monthly Accumulated Gray Screen Period	String	Read Only	Cumulative hours per month for gray screen. Refresh at 0:35 AM every day. Counts the accumulated gray screen period of DATE to current time.
MSG1...20	Descriptions of exiting gray screen	String	Read Only	The alarm description (including tag name, alarm type, tag descriptions). The first tag is MSG1 and the 20th is MSG20. This tag records the information only when the monitor exits gray screen status triggered by an alarm.
STIME1...20	Start Time of Single Alarm	String	Read Only	The tag name for first alarm is STIME1 and the 20th is STIME20, corresponding to the MSG.
ATIME1...20	Acknowledgment Time of Single Alarm	String	Read Only	Display the acknowledgment time of an alarm triggering gray screen exit. The tag for alarm acknowledgment time of unacknowledged alarms is BAD.


Tip:

If the records exceed the upper limit of 20, MSG, STIME, and ATIME will overwrite the earliest records and display the latest records in the 20th tag.

Section 8 Precautions

- 1) After the GrayScreen service restarts, all statistics will be cleared. The longest daily gray screen period, and the total period of the monthly gray screen will be re-counted according to the history. The information of alarm-triggered exits will be cleared and all alarm tags will be BAD.
- 2) The GrayScreen component automatically recognizes the version of the High-performanceHMI component installed in the local computer and use its alarm information by default. If OPC AE/DA is selected, only OPC AE/DA alarm information are used.
- 3) If you are using a referenced domain from High-performanceHMI, the format of the referenced domain tags that entered in the blacklist is: Referenced Domain Alias.Tag Name.
- 4) If OPC AE/DA is selected, MSG1...20, STIME1...20, ATIME1...20 in the OPC tags of the Gray Screen component are invalid.
- 5) If OPC AE/DA is selected, if the OPC service is down due to service off or the network failure, the component generates an alarm with the tag OPCSERVERSTATUS and exit the gray screen.
- 6) Black and white lists are not supported when using OPC AE/DA mode.

Section 9 Revision History

Table 9-1 Revision history

Version	Applicable Product Version	Remarks
V1.1 (20230830)	GrayScreen V1.00.00.00-M	First release.