

WCC III

11. WCC III Alarming

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SECTION 11: WCC III ALARMING

Alarm Call-Out

The WCC III - MCD will automatically E-mail an alarm or alarms to an E-mail address or to multiple E-mail addresses. There are eight different alarm types or alarm classes - each with their own priorities. Only the first five alarm types or classes can “E-mail out”; each of these five alarm types can E-mail up to 12 separate E-mail addresses. You could also send an E-mail to Text message your cell phone, depending on your service plan with your cellular phone provider.

Analog Alarm Limit

Each analog input on a satellite can have a low and high limit assigned to it on the Analog Input Screen. If the value of the analog input falls below the low limit or rises above the high limit, the system automatically generates an alarm.

For example, assume that the analog input in question is a room temperature sensor located in an office space. If the space temperature falls below 68 °F or rises above 80 °F during the occupied period, we want an alarm to be generated. To set up the alarm limits, first sign on by accessing the *System Parameters Screen* and entering your password. An access level of 1 or greater is required to enter or change alarm limits. An access level of 2 or greater is required to enter or change what the alarm is controlled by, the alarm type, and the alarm messages. After you are signed on, return to the *Main Menu*, place the cursor over “ANALOG INPUT” and *press* <Enter>. Then place the cursor over one of the eight analog inputs and *press* <Enter>. An *Analog Input Screen* similar to what is shown in **Figure 11-1** should come into view:

ANALOG INPUT SCREEN

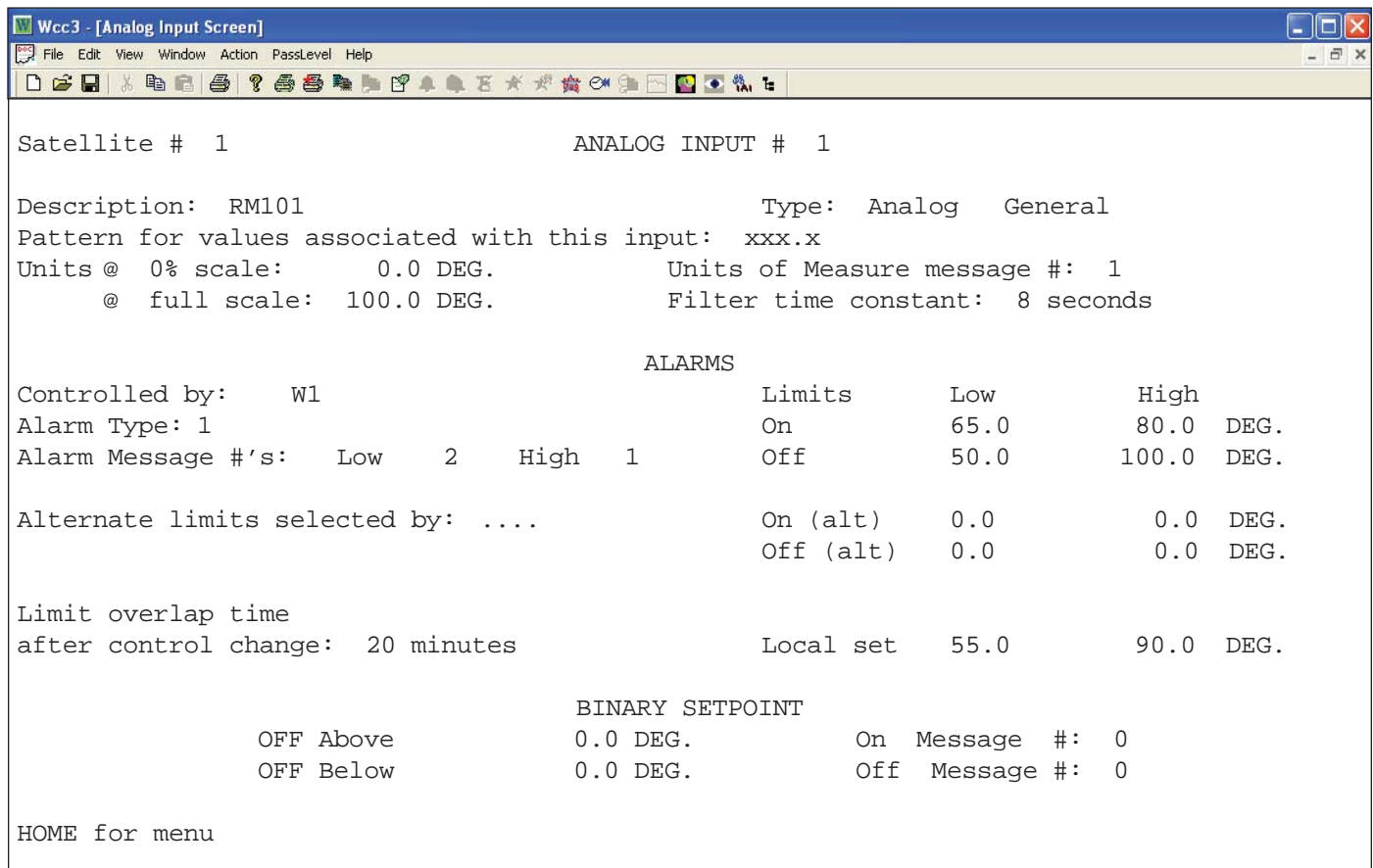


Figure 11-1: Analog Input Screen

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Run Time Alarm

The alarm limits along with the alarm type and alarm message numbers are assigned on this screen (see the *Analog Input Screen* in Section 3 of this guide for more information). If the space temperature drifts out of the entered alarm limits, the system will automatically generate an alarm. For example, assume that the space temperature rises above the high limit value of 80 °F. Alarm message #1 (High Temperature) along with the time and date of the alarm and the high peak value of the room temperature will appear on the *Analog Input Summary Screen* and the *Alarm Summary Screen*. Within one minute from the time the alarm appears on the screen, it will automatically be e-mailed if enabled.

To acknowledge alarms, *select* <Action> from the *Top Menu Bar* and then *select* <Acknowledge Alarm> or <Acknowledge All Alarm> described in the *Action Menu*, *Analog Input Summary Screen*, and *Alarm Summary Screen* in Section 3 - Screen Descriptions.

NOTE: The <Acknowledge All Alarms> option will only work on the *Alarm Summary Screen*.

Run Time Alarm

The WCC III system also has the capability of alarming if the total ON time of a binary (on/off) value has exceeded the run time alarm limit. To assign a run time alarm limit, first sign on by accessing the *System Parameter Screen* and entering your password. An access level of 2 or greater is required to enter or change alarm limits. After you are signed on, return to the *Main Menu* and place the cursor over “TREND LOGS” and *press* <Enter>. The *Trend Log Summary Screen* should come into view. To access a *Run Time Trend Logging Screen*, use the arrow keys to place the cursor (>) by the desired run time point and *press* <Enter>. The following screen should come into view (**Figure 11-2**):

In this example screen, we are recording the total “ON” time of contact KIH (COM to H contact closure) on satellite controller #1. When contact KIH is closed, or “ON”, Fan #1 runs. Run time recorder #1 records total accumulated run time of the fan. Alarm message #7 (Grease Bearings) will automatically appear on the *Alarm Summary Screen* when the total accumulated run time of the fan exceeds 500 hours. Within one minute after the alarm appears on the screen, it will automatically e-mail if enabled. (See the *Alarm Summary Screen* in Section 3 for information about how to acknowledge a run time alarm, and see the *Run Time Trend Logging Screen* in Section 3 for information about how to reset the accumulated run time to zero.)

SAT RUN TIME TREND LOG SCREEN

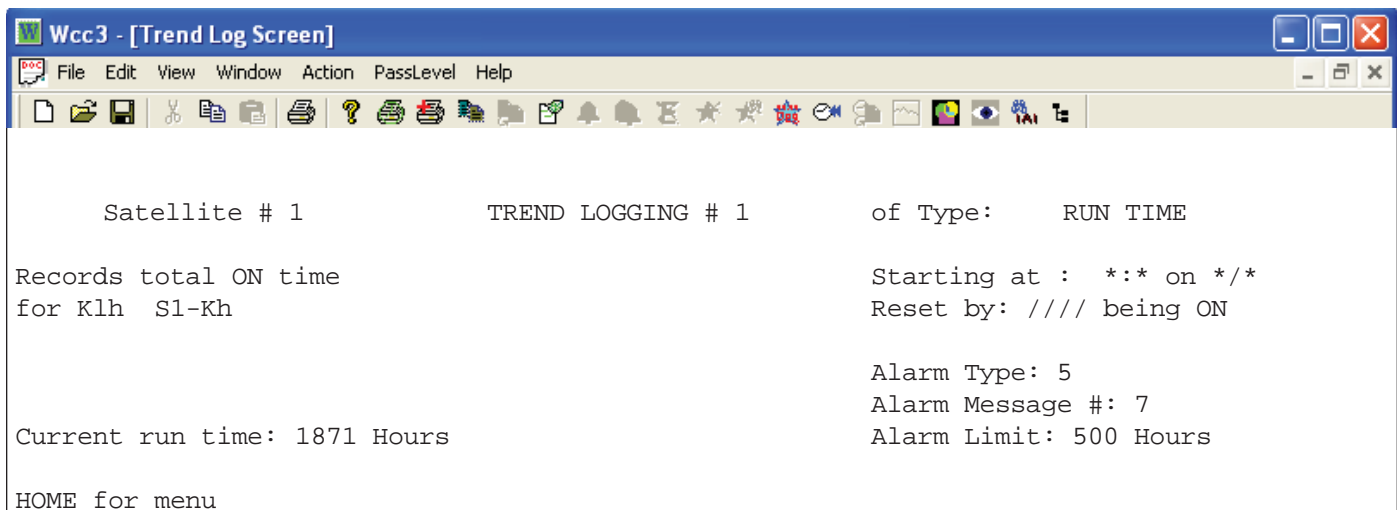


Figure 11-2: SAT Run Time Trend Logging Screen

Satellite SOS Alarm

If the Master Communications Device loses communications with a satellite controller, a Satellite SOS Alarm on the *Satellite Summary Screen* will state which satellite is out of service.

TUC TOS Alarm

If for some reason the SAT3C/D/F controller loses communications with its loop of TUC controllers, then the Satellite will report back to the WCC III – MCD that there are TUCs OFF SYSTEM with a TOS alarm on the *Satellite Summary Screen*. There is a series of minus's (-) and asterisks (*) that show which TUCs are communicating. The minus's (-) represent missing or non-existent TUCs and the asterisks (*) are TUCs that are currently communicating.

WCC III Auto System Logging

The WCC III auto system logging features are logged by the Backtask.exe program, and these log files are then stored on the hard drive of the WCC III - MCD. These log files may then be retrieved by using the WCCUtility.exe program. The WCC III automatic system logging features are defined as the following: System Log, Alarm Log, Data Log, Acknowledge Alarms Log, System Event Log, and MCD Comm Error Log. These log files are described in detail in Section 5.

WCC III System Log

The WCC III system will automatically log the operator ID, IP address, time, and date when an operator signs on or off the system.

WCC III System Alarm Log

The WCC III System will automatically log an alarm, the alarm type, and the date and time at which the alarm occurred.

WCC III System Data Log

The WCC III System will automatically log any data point that has been changed or overridden, the logged in operator ID that changed it, and the date and time that it was changed.

WCC III System Acknowledge Alarm Log

The WCC III System will automatically log all alarms that have been acknowledged, the logged in operator ID that acknowledged the alarm(s), and the time and date of the acknowledgement.

WCC III System Event Log

The WCC III System will automatically log system events such as new connections through the internet, when a internet connection is closed, E-mails sent out, and satellites found or lost on the Comm loop.

WCC III MCD Communication Error Log

The WCC III System will automatically log all communication errors between the MCD and the satellites on the communication loop.

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Text Messaging Alarms

How to Send a Text Message to a Cellular Phone via an Email from the WCC III System

Most cellular telephone providers have as a free* option (charges may apply in some instances) an E-mail to TEXT service for their cellular phone plans. *Usually the cellular telephone providers will have an unlimited text messaging option in one or more of their plans.

When using Verizon cellular service, the text messaging e-mail address for your phone is your 10-digit phone number followed by @VTEXT.com. For example, if your phone number is 1-555-555-5555, your e-mail address (for TEXT MESSAGING) would be 5555555555@VTEXT.com

When using Sprint cellular service, the text messaging e-mail address for your phone is your 10-digit phone number followed by @messaging.sprintpcs.com. For example, if your phone number is 1-555-555-5555, your e-mail address (for TEXT MESSAGING) would be 5555555555@messaging.sprintpcs.com.

When using AT&T cellular service, the text messaging e-mail address for your phone is your 10-digit phone number followed by @txt.att.net. For example, if your phone number is 1-555-555-5555, your e-mail address (for TEXT MESSAGING) would be 5555555555@txt.att.net

For example: 5555555555@VTEXT.com or 5555555555@messaging.sprintpcs.com or 5555555555@txt.att.net would be programmed into the *WCC III System Parameters Screen* as an E-mail address. Any alarm type level that is generated would be sent to that cellular telephone number as a text message.

Analog Global and Binary Global Alarms

Analog Global Alarms

| ALARM | | | | | |
|---------|-----------|------------|------|-----------|-------------|
| Range | Low Limit | High Limit | Type | Message # | Message |
| Outside | 33.0 | 55.0 | 2 | 3 | GB1 (55-85) |

Each one of the 256 Analog Globals can have an analog type of alarm that can be associated with it. On the *Global Analog Setup Screen* (found in Section 3) there is a Low Limit and a High Limit for determining the alarm point activation, and well as a range option that can be set so that the alarm limits can be set to be “Inside” or “Outside” of the Low Limit and, or High Limit. An Alarm type option is included also for the global alarm type. Alarm types 1 to 5 can be set to send a alarm E-mail out to an E-mail address, while alarm types 6,7, and 8 can not send out an E-mail alarm but can be displayed on the Alarm Summary Screen.

There is a Alarm Message # that can also be selected on this Analog Global setup screen. These Alarm messages can be user programmed on the *Alarm Messages Screen* on the main screen of the WCC3.exe program. You must have a level 2 password to setup any Analog Global alarm.

Binary Global Alarms

| ALARM | | | | | |
|----------------|----|-------|---|----------|------------------|
| Set Condition: | On | Type: | 0 | Message: | 1 Low Temp Alarm |

Each one of the 512 Binary Globals can have a binary type of alarm that can be associated with it. On the *Global Binary Setup Screen* (found in Section 3) there is Alarm “Set Condition” of either “ON” or “OFF” or “None” for determining the alarm point activation. An Alarm type option is included also for the global alarm type. Alarm types 1 to 5 can be set to send a alarm E-mail out to an E-mail address, while alarm types 6,7, and 8 cannot send out an E-mail alarm but can be displayed on the *Alarm Summary Screen*.

There is a Alarm Message # that can also be selected on this *Binary Global Setup Screen*. These Alarm messages can be user-programmed on the *Alarm Messages Screen* accessed from the main screen of the WCC3.exe program. You must have a level 2 password to setup any Binary Global alarm.

ALARM SUMMARY SCREEN

The screenshot shows a window titled "Wcc3 - [Alarm Summary Screen]" with a menu bar (File, Edit, View, Window, Action, PassLevel, Help) and a toolbar. The main content is a table with columns: Address, Class, Pending, Description, Alarm Message(s), Time, and Date. The time is 13:40 and the date is 04/30. The table lists various alarm points with their descriptions and messages. At the bottom, there is a status bar with "HOME for menu", "Ready", "NUM", "Level:3", "SOS:3", and "SAT:34".

| Address | Class | Pending | Description | Alarm Message(s) | Time | Date |
|---------|-------|---------|-------------|------------------|-------|------------|
| | | | | | 13:40 | 04/30 |
| > 1A1 | 2 | | Room | | Low | Temp Alarm |
| 1A2 | 1 | | Room | High Temp Alarm | Low | Temp Alarm |
| 2A2 | 2 | | Demand Mtr | No Message | | |
| 32T1r | 7 | | Hot #1 | run time - steve | | |
| GA1 | 2 | | 12r1a | GB1 (55-85) | | |
| GA2 | 2 | | 12r1b | GB1 (55-85) | | |
| GA3 | 2 | | 12p1 | GB1 (55-85) | | |
| GA4 | 2 | | 12a1 | GB1 (55-85) | | |
| GA5 | 2 | | 1211 | GB1 (55-85) | | |
| GA7 | 2 | | 12r2a | GB1 (55-85) | | |
| GA8 | 2 | | 12r2b | GB1 (55-85) | | |
| GA9 | 2 | | 12p2 | GB1 (55-85) | | |
| GA10 | 2 | | 12a2 | GB1 (55-85) | | |
| GA11 | 2 | | 1212 | GB1 (55-85) | | |
| GA18 | 2 | | one | GB1 (55-85) | | |
| GA22 | 2 | | test | GB1 (55-85) | | |
| GA42 | 1 | | Linux Glob | Temp OutOf Range | | |
| GA43 | 1 | | CO2 | Temp OutOf Range | | |
| GA44 | 1 | | Linux Glob | Temp OutOf Range | | |
| GA45 | 1 | | Test Run T | Temp OutOf Range | | |

HOME for menu
Ready NUM Level:3 SOS:3 SAT:34

Figure 11-4: Alarm Summary Screen

On the main screen of the WCC3.exe program there is choice field for the Alarm Summary Screen. Upon entering the *Alarm Summary Screen*, you will find that there may be an alarm or alarms that may be currently displayed.

The WCC3 logical point addressing is used on this Alarm Summary Screen for exact displaying of an alarm point address that is currently in or was in alarm. See Section 3 for further details on this screen.

To Acknowledge Alarms on this screen, *select* <Action> from the Top Menu Bar and then *select* <Acknowledge Alarm> or <Acknowledge All Alarms>.

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System Parameters Screen

SYSTEM PARAMETERS SCREEN

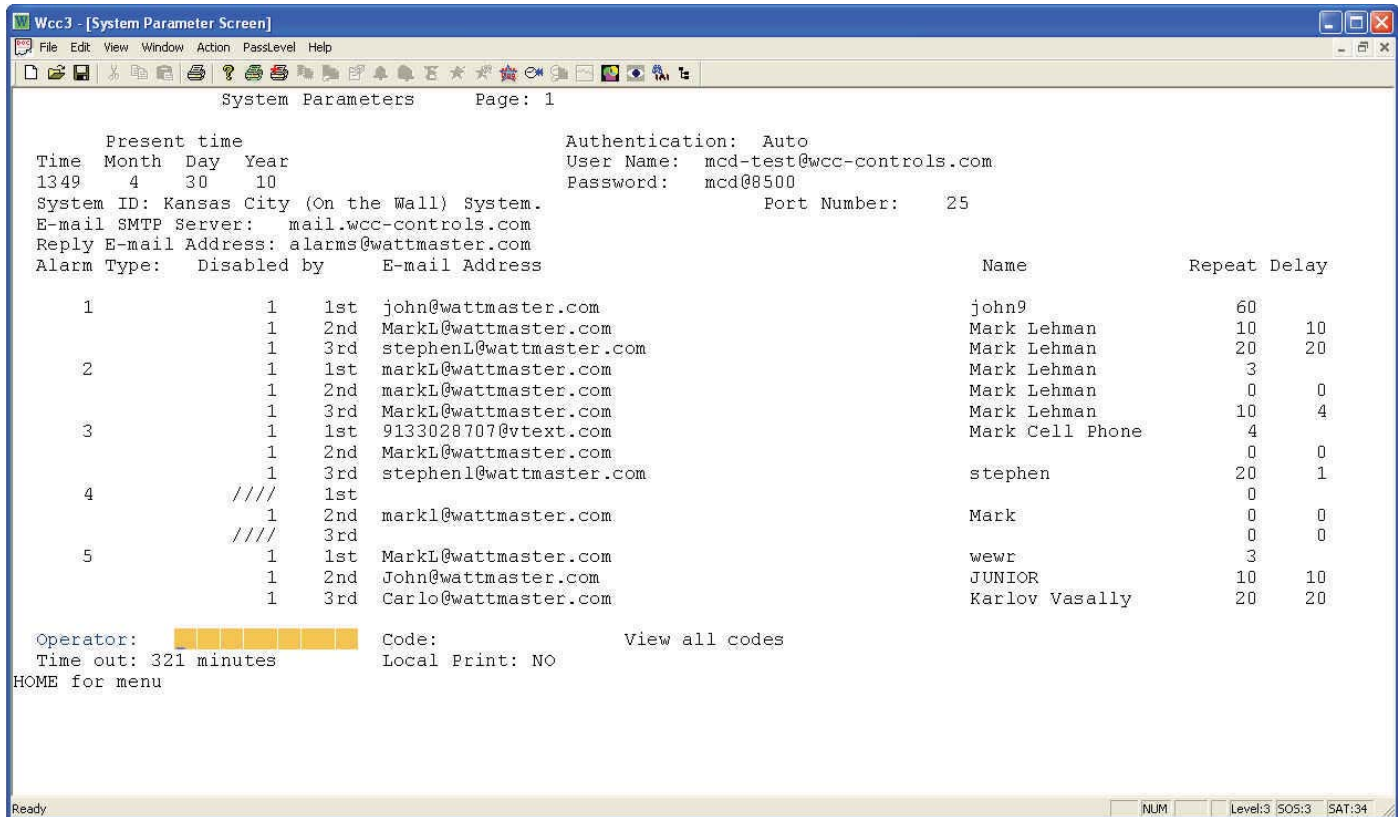


Figure 11-5: System Parameters Screen

The WCC3 *System Parameters Screen* is used to enable, disable, and setup E-mailing of Alarms for the WCC3 system.

Page:

The Page field at the very top of the WCC3 *System Parameters Screen* refers to the fact that there can be up to 4 separate pages for the setup of various E-mail addresses that then can be filled out, so that up to 12 separate E-mail Addresses per Alarm type can send out Alarm E-mails. These Alarm Call-out E-mails are based upon "Alarm Type" 1 through 5 only. Alarm types 6, 7 and 8 do not, and cannot, cause an Alarm Call-out E-mail to be sent out.

All of the programmed setup information for the "Present time", "Authentication:", "User Name:", "System ID:", "Password:", "E-mail SMTP Server:", "Reply E-mail Address:", "Time out:", and "Local Print:" fields do not change with the Page toggle function.

Present Time
Time Month Day Year:

Specifies the current time and date. The time is in 24-hour format, the month has a range of 1 to 12 (1 for January and 12 for December), and the day can range from 1 to 31 (depending on the current month).

User Name: Password:

For e-mail servers that require authentication, the username field needs to have a valid user name. The password field needs to have a valid password that matches with the User Name. Both of these fields' data comes from your Internet Service Provider or from your IT Personnel.

The User Name can be up to 30 characters (control codes, ALT codes, and the double quote character are not allowed). The password can be up to 20 characters (control codes, ALT codes, and the double quote character are not allowed). The User Name and Password are the ones set up for the Backtask program's e-mail account. Both the user name and password are case-sensitive.

Authentication:

For e-mail servers that require authentication, this field should be set to Auto, Login or Plain. For e-mail servers that do not require authentication, this field should be set to “No.” - See your Internet provider and/or IT personnel for this setting.

E-mail authentication from the WCC3 system is the effort to equip E-mail messages of the WCC3 e-mail transport system with enough verifiable information, so that the End User recipient’s E-mail server can recognize the nature of each incoming message from the WCC III - MCD email’s SMTP automatically without rejecting it as SPAM. WattMaster Controls, Inc. supports 4 basic types of E-mail authentication—AUTO, PLAIN, LOGIN, and CRAM-MD5.

AUTO: In the WCC3 system, the selection for authentication “AUTO” applies to The Password Authentication Protocol (capitalized) and is sometimes abbreviated PAP. PAP is a simple password authentication protocol that is used to authenticate a user to a network access server used for example by internet service providers. PAP is used by Point to Point Protocol to validate users before allowing them access to server resources. Almost all network operating system remote E-mail servers support PAP. It requires that you have both a legitimate “User Name” and “Password”.

PLAIN: In the WCC3 system, the selection for authentication “PLAIN” applies to unencrypted “Plain” text that is sent to and from the E-mail SMTP server. It is most commonly associated with a POP3 type E-mail server.

The Post Office Protocol (POP) is an application-layer Internet standard protocol used by E-mail user accounts to send and retrieve e-mail from a remote server over a TCP/IP connection. POP and IMAP (Internet Message Access Protocol) are the two most prevalent Internet standard protocols for e-mail retrieval. Virtually all modern e-mail clients and servers support both. The POP protocol has been developed through several versions with version 3 (POP3) being the current standard.

LOGIN: Login Authentication is a process closely related to identification. In online E-mail environments where “login” authentication is required, the username identifies the user, while the password authenticates that the user is whom he or she claims to be. Typically, the “Login” authentication is used on E-mail servers with SSL type E-mail protocols.

Secure Sockets Layer (SSL), are cryptographic protocols that provide a level of security for secure communications over networks such as the Internet.

CRAM-MD: In CRAM-MD5 authentication, the server first sends a challenge string to the client. The client responds with a username followed by a space character and then a 16-byte digest in hexadecimal notation. The digest is the output of HMAC-MD5 with the user’s password as the secret key and the server’s original challenge as the message. The server also calculates its own digest with its notion of the user’s password, and if the client’s digest and the server’s digest match then authentication is successful.

This provides three important types of security. First, others cannot duplicate the hash without knowing the password. This provides authentication. Second, others cannot replay the hash—it is dependent on the unpredictable challenge. This is variously called freshness or replay prevention. Third, observers do not learn the password. This is called secrecy. The two important features of this protocol that provide these three security benefits are the one-way hash and the fresh random challenge.

System ID:

The system ID field on the WCC3 System Parameters Screen is used to identify the actual physical location of the WCC3 system. This System ID “Name” will be on all of the E-mails that this specific WCC III - MCD will send out, in the center of the Main Screen of the WCC3.exe program, and on the Energy Consumption Table. This field on the WCC3 System Parameters Screen is limited to 50 total characters (control codes, ALT codes, and the double quote character are not allowed) for the System ID.E-Mail SMTP Server:

E-Mail SMTP Server:

(SMTP) Simple Mail Transfer Protocol is an Internet standard for electronic mail (e-mail) transmission across Internet Protocol (IP) networks. This field on the WCC3 System Parameters screen is limited to 52 total characters for the E-mail address.

WattMaster Controls can and will usually provide an initial E-Mail SMTP server for the initial setup of the WCC III - MCD when it is first installed. This SMTP Server that is provided by WattMaster Controls is not guaranteed to last for the life of the WCC3 system. At some point in the future, there may also be a service fee associated with maintaining this SMTP server from WattMaster Controls.

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System Parameters Screen

Port Number

The WCC3.exe program opens a two-way, secure communications port that then allows for communication between WCC III – MCD and the WCC3.exe program that is running on the WCC III front end computer. This IP Address connection is done on a higher address port number than normal (WCC III connection is port number 39289) to help reduce the risk of computer hacking.

Port Number 25 should always be used on the WCC3 system, but in rare instances other port addresses can be used to improve security on the WCC III – MCD. This generally requires advanced IT support for implementation.

Port Number “25” is the usual TCP port for common SMTP operation.

Reply E-mail Address:

Some E-mail SMTP servers require a reply E-mail address during the Authentication process.

The End User on the WCC3 system with internet access should have an E-mail address that usually is provided with the static internet address or static Host name that comes from the internet service provider. This field on the WCC3 System Parameters Screen is limited to 52 total characters for the E-mail address.

Alarm Type:

There are 5 Alarm types that can be programmed to send out an Alarm E-mail to specific E-mail address.

Disabled by

The Disabled by field is used to enable or disable the specific alarm type. (Remember that there can be 4 pages of E-mail addresses.) An “ON” or “1” disables the E-mailing of the Alarm type Callout function per E-mail address. An “OFF” or “0” enables the E-mailing of the Alarm type Call-out function per E-mail address.

This “Disabled by” field can be programmed with the following: 0 (OFF), 1(ON), WXXX (Week Schedules), SXXX (Optimal Starts), GBXXX (Global Binaries), new day, new hour, new min, GCXXX, GHXXX, GLXXX (Tenant Override groups), LOCSET (Local Set Mode), TEST (TEST Mode), /=//// (For Null value). Just remember that the //// is a Null function that is neither “ON” or “OFF”, but is generally treated as “OFF” condition but not always.

Email Address

The E-mail Address field on the WCC3 System Parameters Screen is the E-mail address that you want send the specific WCC3 Alarm E-mail that is based on Alarm type 1 to 5. There can be up to 12 E-mail address per alarm type.

This E-mail Address field on the WCC3 System Parameters Screen is limited to 50 total characters for the E-mail address.

1st, 2nd, 3rd Email Address

The “1st” E-mail Address is the primary or the first E-mail address that the WCC3 alarm type (1 to 5) will send an E-mail alarm to.

The “2nd” E-mail Address is the secondary or second E-mail address that the WCC3 alarm type (1 to 5) will send an E-mail to after sending the first E-mail of the alarm type.

The “3rd” E-mail Address is the tertiary or third E-mail address that the WCC3 alarm type (1 to 5) will send an E-mail to after sending the second E-mail of the alarm type.

NOTE: On only the first 3 alarm class 1 E-mail addresses on page 1 of the *System Parameters Screen* will receive an automated Satellite Off System (SOS) E-mail message that is sent out to these 3 E-mail addresses when a Satellite controller or multiple Satellite Controllers goes off line (SOS). See the Alarms section of this manual for more information on Satellite alarms.

Repeat

The “Repeat” function is time in minutes to send out a repeated E-mail after the first e-mail is sent, and keep repeat sending this E-mail every “X” amount of minutes until the alarm is acknowledged.

Delay

The “Delay” function is time in minutes before the E-mailing of the alarm to the 2nd and 3rd E-mail addresses after the E-mail is sent to the 1st e-mail address.

Operator

All WCC3 users or “Operators” should have their name entered in this field. This is for security purposes, as each specific operator of the WCC3 system should have his or her Operator’s Name and “Code” and then enter them in the space provided. This “Operator” field on the *WCC3 System Parameters Screen* is limited to 16 total characters. Please note that all of this “Operator Log in” information is kept track of in the WCC3 system log.

Code

This code is short for “Passcode” which is a numerical value of 000000000 to 9999999999. This is for security purposes, as each specific operator of the WCC3 system should have his or her Operator’s Name and “Code” and then enter them in the space provided. This “Code” field on the *WCC3 System Parameters Screen* is limited to 10 total characters.

Time Out

The time out is the time in minutes before the WCC3 program will automatically sign you out after you have not moved the mouse or pressed a key on the keyboard. All password levels are returned to a password level 0.

Local Print:

This function is a carry over from the old WCC2 system and is not used on the WCC3 system.

