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# Serial Data Output

## Introduction

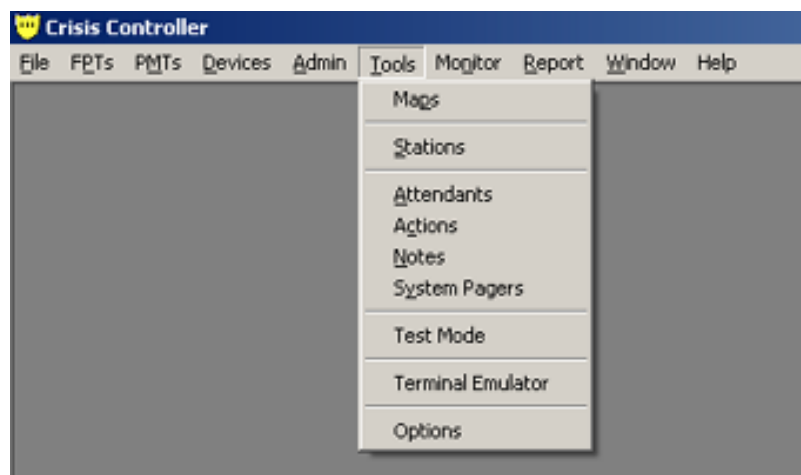
This ATN will discuss the configuration of sending alarm data via one of the installed serial ports on an Actall Crisis Controller monitoring system, using Crisis Controller 5.0 software.

Crisis Controller 5 provides for the ability to send alarm data out for use by external systems or logging by line printer or other data logging device. To facilitate the export of data from the system, a standard RS232 serial port is used.

The data that is sent out from Crisis Controller can be configured to form a specialized data stream. Page 2 of this document describes how to configure the serial port within the Crisis Controller software. Pages 3 through 6 describe how to configure the alarm data string that will be sent out through the selected serial port.

## Configuring the serial output port in Crisis Controller

The initial configuration requires that the serial port be defined upon which the alarm data string will be sent out on. To configure the serial port, click on the menu bar. Then click on Tools, and then Options. This will display the Settings Edit window.



In the Settings Edit window, select the Alarm Output tab. This will allow you to turn on and off the Serial Alarm output, as well as which serial port the data will be sent out on. To enable the serial alarm output, put a checkmark in the Send Serial I/O check box. Then select the COM port under the Serial I/O port drop down list that will be used to send the alarm data. Once this is done, click on the OK button to save the changes. The Actall.CrisisController.MonitorEngine.dll.custom.config configuration file may now be modified. Please continue to the next page.



## Configuring the alarm data string

The configuration of the alarm data string is handled outside of the Crisis Controller application. The best method to modify the configuration file in which the settings are stored is by using the Notepad application included in Windows.

The Actall.CrisisController.MonitorEngine.dll.custom.config file contains the configuration settings for modifying the alarm data string. This file is located in the Crisis Controller installation folder. The default installation folder location is:

C:\Program Files\Actall\Crisis Controller

To create the customized alarm output string, several different keys will have to be modified. It is recommended that a plan of how the keys will be read should be created before going forward with making any changes. Also, it is recommended that all files are backed up before proceeding with any change made manually at the file level.

The description of each applicable configuration line (referred to as 'Keys') follows below.

### KEY: AlarmIoFormatterFormat

```
<add key="AlarmIoFormatterFormat" value="{0}{1}{2}{3}{4}{5}" />
```

This setting defines the format of the alarm data string that will be sent out via the serial port. Each value within the curly brackets {} defines an item which can be sent in the alarm data stream. The object values that may be used are defined as follows:

- {0} The Date/Time String (Further configuration options are available in the AlarmIoFormatterDateFormat key).
- {1} The name of the person or device that is sending the alarm.
- {2} The location where the alarm has occurred.
- {3} The reason, or type of alarm that has occurred (For PMTs: Panic, Man Down, Pullcord, Low Battery, Supervision. For FPTs, Repeaters, and RFLs: Alarm, Low Battery, Tamper, Supervision)
- {4} The status of the alarm (Unacknowledged, Acknowledged, Reset, and Restored)
- {5} The identification number of the device which sent the alarm.

Also, alternate spacing, number, letters, and other types of characters (in ASCII) can be configured. For example, if an alarm data string needs to be prefaced with the ASCII start of text character (hexadecimal 02), and the string needs to end with the ASCII end of text character (hexadecimal 03), a % sign with the hexadecimal ASCII code would be used. The resulting configuration string (leaving all other default values) would look like: %02{0}{1}{2}{3}{4}{5}%03

Characters can also be placed within the string, but not within the brackets. For example, including the start and end of text characters, a string can look like the following: %02{0}-{1}-{2}{3}{4}device id{5}%03

Also, if all data provided is not required, such as the date and time of the alarm or the name of the person or device, alternate types of alarm formats can be generated. For example, to exclude the date and time, as well as the name of the person or device, the following string could be used: {2}{3}{4}{5}. This would provide an alarm data string containing the location where the alarm occurred, the type of alarm, the status of the alarm, and the ID number of the device sending the alarm.

NOTE: Only one AlarmIoFormatterFormat string can be defined per installed system. An installed system includes all Crisis Controller computers installed at a facility using the same set of data.

### KEY: AlarmIoFormatterDateFormat

(AlarmIoFormatterFormat item {0})

```
<add key="AlarmIoFormatterDateFormat" value="yy-MM-dd HH:mm" />
```

This key allows for the formatting of the date and time string that is sent out in the alarm data string.

The following date format value settings are available.

yy	Defines the year. Output is in two digit format.
MM	Defines the date. Output is in two digit format.
dd	Defines the day. Output is in two digit format.
HH	Defines the hour of the day. Output is in two digit, 24 hour format.
mm	Defines the minute of the day. Output is in two digit format.

The date/time string can be changed to suit the application. If only the month, day, hour and minute time stamp are required, the value could be set to the following: **MM-dd HH:mm** . Acceptable characters to be used for delineating time are:

: ; . , - \_

Any other characters besides those mentioned above are not supported by Actall Security Products. Any additional characters that might come before or after the string should be inserted into the AlarmIoFormatterFormat key.

### KEY: AlarmIoFormatterDateWidth

(AlarmIoFormatterFormat item {0})

```
<add key="AlarmIoFormatterDateWidth" value="15" />
```

This controls the width of the Date string. If all data within the configured output string for the date in the key AlarmIoFormatterDateFormat is sent, and is less than the character count defined by this key, then additional spaces (ASCII 20) will be appended to the end of the string until the number specified is reached. For example, if the date 10-21-05 13:22 is output, and this key is set to 20, the date with 6 spaces following would be sent on the serial port. The default value for this key is 15 (which provides for the date to be always shown in whole with the default AlarmIoFormatterDateFormat key set, as well as providing one space after the date/time for easier reading). The minimum output width is 1 and the maximum output width is 50.

### **KEY: AlarmIoFormatterNameWidth**

(AlarmIoFormatterFormat item {1})

```
<add key="AlarmIoFormatterNameWidth" value="50" />
```

This key is responsible for controlling the width of the name output. If the name is longer than the defined value, it will be truncated to that value. If the name is shorter than the value, it will have additional spaces (ASCII 20) appended to equal the length of the value. The minimum output width is 1 and the maximum output width is 50.

### **KEY: AlarmIoFormatterLocationWidth**

(AlarmIoFormatterFormat item {2})

```
<add key="AlarmIoFormatterLocationWidth" value="50" />
```

This key is responsible for controlling the width of the location output. If the location string is longer than the defined value, it will be truncated to that value. If the location string is shorter than the value, it will have additional spaces (ASCII 20) appended to equal the length of the value. The minimum output width is 1 and the maximum output width is 80.

### **KEY: AlarmIoFormatterReasonWidth**

(AlarmIoFormatterFormat item {3})

```
<add key="AlarmIoFormatterReasonWidth" value="15" />
```

This key is responsible for controlling the width of the Alarm Reason output string. If the string is longer than the defined value, it will be truncated to that value. If the string is shorter than the value, it will have additional spaces (ASCII 20) appended to equal the length value. Regardless of the setting, the output will always contain 15 characters.

### **KEY: AlarmIoFormatterStatusWidth**

(AlarmIoFormatterFormat item {4})

```
<add key="AlarmIoFormatterStatusWidth" value="20" />
```

This key is responsible for controlling the width of the name output. If the string is longer than the defined value, it will be truncated to that value. If the string is shorter than the value, it will have additional spaces (ASCII 20) appended to equal the length value. The minimum output width is 1 and the maximum output width is 30.

## KEY: AlarmIoFormatterIdWidth

(AlarmIoFormatterFormat item {5})

```
<add key="AlarmIoFormatterIdWidth" value="5" />
```

This key is responsible for controlling the width of the device ID number output. If the string is longer than the defined value, it will be truncated to that value. If the string is shorter than the value, it will have additional spaces (ASCII 20) appended to equal the length of the defined value. This value should never exceed five characters in length. The minimum output width is 1 and the maximum output width is 5. Note that this value will depend on the type of transmitter. If the entire status messages is in regards to a repeater or RFL, this field will contain the ID number of said repeater or RFL. If this alarm is for a PMT, the value of this setting will contain the ID number for said PMT.

Also note that the PMTs use one number set, while all other transmitters (Including RFLs, repeaters, and FPTs) use a different number set. Both of these number sets start at 1. The PMT number set ends at 65535, where the transmitter number set ends at 2047. It is recommended to use different number ranges (ie assign all transmitters IDs with a range of 1 to 2000 and PMTs IDs starting at 3000 and up).

A good example involves a repeater and a PMT. The example repeater has an ID number of 1 assigned. The example PMT has the same ID numbers, 1, assigned as well. If the PMT goes inactive and sets a supervision alarm, and part of the alarm data string that is monitored relies on the Alarm ID key, then a false alarm may occur and display for the example repeater. Conversely, the same situation could occur if a repeater did not check in within a certain period of time and set a supervision alarm.