

# Device State Reporting

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## Concept

EnterpriseSMS supports OCS device *bypass*. A device whose device state is *bypass* has its alarm messages discarded by the system. In this manner, the transmission of multiple identical alarms from a device ("stuttering") can be prevented from burdening the network and server with repetitive transactions.

An alarm from a device whose device state is *bypass* may not be released; neither may an alarm from a device whose device state is one which indicates a *not secure* condition. Therefore, when a bypassed device is unbypassed, it is placed a *secure* device state. The device is then queried to determine its correct status, and its device state is updated.

The above process is effective. However, system administrators must be aware of certain data definition constraints to avoid incorrect reporting of device states. This document details these constraints.

Each device state is represented by an *event code* (defined in SYSADMIN-SYSTEM CODES-EVENT CODES). When a device undergoes a state change, the controller reports that state change using certain codes defined within its protocol. That code is interpreted by EnterpriseSMS based on parameters in the *event code table*. Any event code may be defined to report as any state, to update stored device state information or not, to log or not to log, etc. Thus, the user has great flexibility in customizing how alarms report.

## AMC Micronode Installation Considerations

AMC Micronodes are not sensitive to open and closed conditions. Because of this, problems arise if Micronode input devices are defined as both *open = alarm* and *open = secure* within an EnterpriseSMS system. Therefore, the installer must decide between these different wiring options during pre-installation planning. Micronodes report device states according to the following table:

Event/Status Request	Micronode Reports	Event Code Assigned
Point changes to Open	PO	AMPO
Point changes to Closed	PC	AMPC
Exit Request when Open	PO	AMPO
Exit Request when Closed	PC	AMPC

## AMC Multinode Installation Considerations

AMC Multinodes permit the user to establish whether *open* or *closed* will report as an alarm. Device states report as follows:

### Two State - Point Defined as Normally Closed

Device State Change	Defined As	Node Reports	Event Code
Point changes to Open	Alarm	Pa	AMPA
Point changes to Closed	Alarm	Pn	AMPN
Status Request when Open	Alarm/Event	PO	AMPO
Status Request when Closed	Alarm/Event	PC	AMPC
Point changes to Open	Event	Pa	EMPA
Point changes to Closed	Event	Pn	EMPN

#### Two State or Two State Reporting on 4 State Wiring - Point Defined as Normally Open

Device State Change	Defined As	Node Reports	Event Code
Point changes to Open	Alarm	Pn	AMPN
Point changes to Closed	Alarm	Pa	AMPA
Status Request when Open	Alarm/Event	PO	AMPO
Status Request when Closed	Alarm/Event	PC	AMPC
Point Changes to Open	Event	Pn	EMPN
Point changes to Closed	Event	Pn	EMPA

#### Four State - Point Defined as Normally Open or Normally Closed

Device State Change	Defined As	Node Reports	Event Code
Point changes to Circuit Short	Alarm	Ls	AMLS
Point changes to Circuit Open	Alarm	Lo	AMLO
Status Request when Circuit Short	Alarm/Event	Ls	AMLS
Status Request when Circuit Open	Alarm/Event	Lo	AMLO
Point changes to Circuit Short	Event	Ls	EMLS

Point changes to Circuit Open

Event

Lo

EMLO

### Configuration Example

The following example diagrams a positive phase, or *closed = secure* wiring plan. The following event code settings will insure proper reporting from an input device for which *closed* should equal *secure*:

Node Reports	Event Code	Description	Alarm Flag	Allow Device State Change	Device State
Pa	AMPA	I/P Point - Alarm	Y	Y	Alarm
Pa	EMPA	I/P Point - Event	N	Y	Alarm
PC	AMPC	I/P Point - Closed	N	Y	Secure
Pn	AMPN	I/P Point - Normal	N	Y	Secure
Pn	EMPN	I/P Point - Event	N	Y	Secure
PO	AMPO	I/P Point - Normal	N	Y	Alarm
Lo	AMLO	I/P Circuit Open-Alarm	N	Y	Open
Lo	EMLO	I/P Open-Event	N	Y	Open
Ls	AMLS	I/P Short-Alarm	Y	Y	Closed
Ls	EMLS	I/P Short-Event	N	Y	Closed

Should a normally open device be attached, assigning the proper phase choice in the form FACILITY-TEMPLATES-MULTINODE-INPUT POINTS insures proper reporting . Proper options include:

- Normal State: O (open)
- Report Opening As: A (alarm)
- Report Closing As: E (event)

These settings will result in the correct reporting of alarms. However, the AMC Multinode does not consider the above parameters when responding to requests for status (Ps). Therefore, a *closed* device in an *alarm* state will respond incorrectly to a request for status when the device is bypassed and

subsequently unbypassed. In this situation, the AMC Multinode will report *closed* (PC) and *secure* . This is correct for a normally closed device but incorrect for a normally open device. Multinodes do not check the above *normal state* parameter when responding to a status request.

If a stuttering device is bypassed, a subsequent unbypass transaction will place it in a *secure* device state until the system checks it. If the result of that check is *closed* , it will remain in a secure state. If the result is *open*, its device state will be *alarm*.

This is further complicated on dialup sites. On a direct connect site, both alarms and events are received by the system during polling. On a dialup site, events are queued at the node until the next scheduled download, or until an alarm condition forces a download. So, the misreporting alarm condition outlined above will not register at the server until the schedule permits.