Digital Communication Standard - Ademco ® Contact ID Protocol - for Alarm System Communications

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Written requests for interpretations of this standard and other matters of document publication should be addressed to:

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ACKNOWLEDGMENTS

This document was developed by Richard Hinkson of *the ADEMCO Group, a division of Pittway Corporation*.

The Ademco “Contact ID” protocol has become a prevalent and respected format for digital communications between security alarm systems and central monitoring stations. Many manufacturers have adopted it, seeking industry wide compatibility.

SIA gratefully acknowledges Ademco’s generous contribution to communications in the security industry, both in allowing SIA to publish this protocol as a de facto security industry standard and in accepting industry requests for modifications.

REVISION HISTORY

The following are changes made to this document, listed by revision.

SEPTEMBER 1999 BASELINE

Original Publication

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Digital Communication Standard - Ademco ® Contact ID Protocol - for Alarm System Communications

1. SCOPE

This standard details the specification for the "Ademco ® Contact ID" communication format, originally developed by the Ademco Group, a division of Pittway Corporation.

The purpose of this standard is to detail the Contact ID signaling format such that it can be adopted by any manufacturer of digital transmitters or receivers. Documentation and distribution of this communication format is intended to provide an across-the-board compatibility of equipment designed to this standard regardless of manufacturer.

This communications format utilizes standard DTMF tones for transmission of the information.

1.1 Objectives

a) Provide information regarding events that are occurring on a customer's premises. This information should be in a form that can easily be interpreted by a central station operator.

b) Spend minimum practical time on line per transaction, to minimize the number of receivers required to handle the traffic and minimize the time the line is seized and not available to the customer.

c) Minimize the transmission error rate

d) Minimize the cost of the hardware associated with the transmission of the information

2. CONVENTIONS AND DEFINITIONS

2.1 Conventions

2.1.1 Units of Measurement.

In accordance with SIA Policy, the units of measurements used throughout this publication are the units of the System International d' Unites (SI), commonly known as metric units. Equivalent English Units, enclosed in parenthesis, are also used in this publication. These equivalent English Units are approximate conversions and are provided for easy reference.

2.1.2 Tolerances

Unless otherwise specified, the tolerance for measurements specified within this standard shall be 10 percent (±10%).

2.1.3 Special Capitalization.

Alarm sequence events, alarm system commands and states, and digital communication codes transmitted by the control panel to the central station are capitalized within the text of this standard.

2.1.4 Nomenclature and Identification of Sections.

Sections within this standard are identified and referenced by the number preceding each section. Unless otherwise specified, references to a section refer to only that section and not to subsequent subsections within the section.

2.1.5 Binding Language

This standard uses the term “shall” to convey binding requirements.

The term “may” is used to convey features that are allowed but not required.

Terms such as “is”, “are”, “will”, and others are used to convey statements of fact for advisory purposes only.

The annotation “Note:” also precedes advisory information

2.2 Definitions

For the purpose of this standard, the following terms have the meaning indicated.

Abort - A manual intervention during a process that prevents completion of that process.

Access Code, or Code - A series of digits that a user enters on a keypad to access the system for arming or disarming.

Account, or Account Number - Information that identifies a particular alarm panel.

ACK, see Acknowledgment.

Acknowledgment, or ACK, or Positive Acknowledgment - A signal sent from one participant in the communication process to the other indicating that the data has been correctly received.

Alarm - An indication of an emergency condition. The condition may be that of an intrusion, a fire, a medical panic, etc. Locally the condition usually causes visual and/or audible annunciation. In a system that is monitored, this condition is transmitted to remote equipment.

Alarm Panel - see Control.

Alarm Cancel, or Manual Reset - An action restoring the alarm panel to a non-alarm state. Also the transmission of that change indicating that the previous alarm signal is to be disregarded.

Alarm Verification – Generic name given to many techniques used to confirm or deny the validity of alarms signals received at the monitoring facility. (Also see Verified Alarm)

Arm - To turn on a security system.

Area - A defined section of the protected system that can be armed and disarmed independently. This is sometimes also referred to as a **partition**. When areas are used, they are numbered consecutively beginning with 1.

Bypass - To cause a system to ignore input changes from a given point or zone, regardless of the arming state. Bypassed points and zones do not cause alarm events. (Also see Zone Bypass, Unbypass)

Close, or Closing - The manual or automatic arming of a security system. (Also see Early to Close, Fail to Close, Late to Close)

Code - see Access Code, User Code

Control, Control Panel, or Alarm Panel - The part of a security system that handles control and communication, whether as combined or separate physical units.

Disarm - To turn off a security system (except for 24 hr devices).

DTMF or **D**ual **T**one **M**ulti-**F**requency – A standard signaling method for dialing and data transmission using a combination of two sine waves at different frequencies. It is commonly referred to as Touch-Tone® signaling.

Duress - A code that can be entered if one or more persons try to force an individual to enter, or re-enter, a facility against the individual's will.

Early to Close, or ETC - An event created by the arming of a system before a specified time.

Early to Open, or ETO - An event created by the disarming of a system before a specified time.

Entry Delay or Entry Time - The period of time allowed, after entry to the premises, to disarm the security system before tripping an alarm.

Exit Error – A signal produced by a point or zone that is still violated when the exit time has expired.

Exit Delay, or Exit Time - The period of time allowed, after arming a security system, to exit the premises before tripping an alarm.

Fail to Close, or FTC - An event created by the system at a preset time if it remains in the disarmed state.

Fail to Open, or FTO - An event created by the system at a preset time if it remains in the armed state.

Handshake - A signal sent by one end of the communication channel to the other indicating reception of signal.

Keypad - The part(s) of a security system from which a human operator can arm and disarm the system, manipulate the system operation, or otherwise interact with the system.

Late to Close, or LTC - An event created by the arming of a system after a specified time.

Late to Open, or LTO - An event created by the disarming of a system after a specified time.

Open, or Opening - The manual or automatic disarming of a security system (see also Early to Open, Fail to Open, Late to Open)

Panic - A general type of perceived emergency, including the presence of one or more unwanted persons trying to gain entry or observed intruders on the private grounds.

Partition - see Area.

Point – an electronically addressable sensor, sometimes used interchangeably with the term **sensor**. The term is usually used in multiplex alarm systems or for RF (wireless) sensors.

Receiver - The equipment located at the central station that communicates with a control panel.

Recent Closing - A transmission indicating that the security system has recently been armed.

Report - An electronic transmission sent by the control panel to the central station containing detailed information about an event detected by or a status of the security system.

Sounder - An audible annunciator producing sufficient volume to be heard by person(s) within the protected premises.

Subscriber - see User.

Supervisory Signal - A signal indicating the need of action in connection with the supervision of guard tours, fire suppression systems or equipment, or with the maintenance features of related systems. (Not to be confused with a Trouble signal generated from a supervised zone or point.)

Transmitter - The part of the security system that sends electronic data outside the system, typically to a central station. (Also see Control Panel.)

Trip - An alarm state produced as a result of detection by a sensor.

Trouble – A signal sent to indicate a malfunction, miss-operation, or loss of contact with a supervised zone or point.

Unbypass - To restore a point or zone to normal functioning by removing a bypass condition.

User - The person(s) at the alarm panel site that operate and/or have access to the system.

User Code - see Access Code.

Verified Alarm – An alarm that has been confirmed by monitoring facility contact with the protected premises or an authorized user agent, an alarm from sequentially detected and reported events, a multiple-sensor detected event, or an alarm reported by a system user. (Also see Alarm Verification.)

Zone - A dedicated input to the control panel containing one or more sensor devices that will trip the input upon activation of any one-sensor device.

Zone Bypass - see Bypass

3. REFERENCE DOCUMENTS

This de facto standard does not rely on any other documents for implementation.

Information regarding a specific product that has implemented this de facto standard should be obtained from the manufacturer of that product.

Other unrelated standards for digital communications may be obtained from the Security Industry Association.

4. TRANSMISSION REQUIREMENTS

This section describes the basic components of a communication session.

4.1 Transmission Components

The transmitter to receiver communication session is composed of three basic elements: the *Handshake Tone sequence*, *Message Blocks*, and *Acknowledgements.*

The Handshake Tone sequence consists of a pair of single-frequency tones sequenced in time.

The Message Blocks consist of a series of DTMF tone bursts separated by spaces.

The Acknowledgement Tone is a single tone burst.

4.1.1 Handshake Tones

The Handshake Tone sequence is produced by the RECEIVER. The purpose is to signal the TRANSMITTER that the communication channel is ready.

4.1.1.1 Placement

The Handshake Tone sequence is emitted by the receiver after going off-hook and delaying an interval of at least 0.5 seconds but typically no greater than 2.0 seconds. This time allows the phone network connection to settle before the communication process begins.

4.1.1.2 Composition

The handshake tone sequence shall consist of:

- A burst of 1400 Hz. ±3% tone with a duration of 100 msec. ±5%
- A pause of 100 msec. ±5%
- A burst of 2300 Hz. ±3% tone with a duration of 100 msec. ±5%

Note: Transmitters shall accept a frequency error of at least ± 5% to ensure back-compatibility with older receivers.

4.1.2 Message Blocks

A Message Block is sent by the TRANSMITTER for each message in the transmitter's message queue. Each message block contains sufficient information to report an event in the system.

4.1.2.1 Placement

The first message block is sent beginning 250 msec. (250 min.,300 max.) after the end of either the Handshake Tone sequence or after a Kissoff (Acknowledgement) tone. The delay is timed from the end of the tone.

4.1.2.2 Message Composition

The form of the message is:

ACCT MT QXYZ GG CCC

where:

ACCT = 4 Digit Account number (0-9, B-F)

MT = Message Type. This 2-digit sequence is used to identify the Contact ID message to the receiver. It may be transmitted as either 18 (preferred) or 98 (optional). New receiver implementations shall accept either a 18 or a 98. Note that some older receivers may not accept 98 .

Q = Event qualifier, which gives specific event information:

1 = New Event or Opening
3 = New Restore or Closing
6 = Previously reported condition still present (Status report)

XYZ = Event code (3 Hex digits 0-9,B-F)

GG = Group or Partition number (2 Hex digits 0-9, B-F). Use 00 to indicate that no specific group or partition information applies.

CCC = Zone number (Event reports) or User # (Open / Close reports) (3 Hex digits 0-9,B-F). Use 000 to indicate that no specific zone or user information applies

S = 1 Digit Hex checksum calculated such that:

(Sum of all message digits + S) MOD 15 = 0

Note: A '0' shall be transmitted as a 10 and valued as a 10 for checksum purposes even though it is displayed and printed as '0'. It uses the same tone pair as the '0' (OPER) key on a standard telephone.

4.1.2.3 Data Tones

The message is sent using standard DTMF tones.

The timing of the tones shall be as follows:

Burst ON time - 50 msec. (50 min.,60 max.)
Burst OFF time- 50 msec. (50 min.,60 max.)

The details of the tones are contained in the following table.

Data Transmission Frequencies - Standard DTMF Signaling

Digit	Low Tone (Hz.)	High Tone (Hz.)	Digit Value
0	941	1336	10
1	697	1209	1
2	697	1336	2
3	697	1477	3
4	770	1209	4
5	770	1336	5
6	770	1477	6
7	852	1209	7
8	852	1336	8
9	852	1477	9
B (*)	941	1209	11
C (#)	941	1477	12
D	697	1633	13
E	770	1633	14
F	852	1633	15

Notes:

1) The digit ‘0’ is transmitted with a value of 10 and shall be counted as a 10 in the calculation of the message checksum.

2) The DTMF pair of 941 Hz. And 1633 Hz. is not used in this format and shall not be sent.

3) The frequency deviation on each of the above frequencies shall be ± 1.5% max.

4.1.2.4 Inter-Message Time

After sending its message, the transmitter should wait for 1.25 sec. for the start of a Kissoff Tone from the receiver. If the start of a kissoff tone is detected, the transmitter must continue timing the tone, even if the inter-message time expires. The panel must detect a minimum of 400 msec. of the Kissoff Tone for it to be considered to be valid.

If a Kissoff tone is detected, the transmitter should wait for the tone to end and then wait 250 msec. (250 min.,300 max.) before beginning the next message.

If no Kissoff Tone is received, the transmitter should repeat the message after the expiration of the 1.25 second inter-message interval.

4.1.3 Kissoff (Acknowledgement) Tone

The Kissoff tone from the receiver is used to tell the transmitter that the message has been received successfully. The frequency of the tone shall be 1400 Hz. ±3% and shall be sent by the receiver for a minimum of 750 msec. and a maximum period of 1 second.

The transmitter must detect a minimum of 400 msec. of tone before considering the kissoff to be valid.

Note: Transmitters shall accept a frequency error of at least ± 5% to ensure back-compatibility with older receivers

4.1.4 Maximum Number of Attempts

The transmitter shall make up to 4 attempts to deliver a message before hanging up and redialing. The attempts counter is reset each time a valid kissoff signal is received.

4.2 Data Codes

The data codes used to transmit events are contained in Appendix C: Event Codes.

APPENDIX A: EXAMPLE MESSAGES

Example 1 – Alarm Message

Account 1234 is reporting a Perimeter Burglary Alarm on Zone 15 of Partition 1

The message shall be sent as:

1234 18 1131 01 015 8

where:

1234 = The account number (1234)
18 = The message type used to identify the message as Contact ID
1131 = The Event Qualifier (1) for a new event, followed by the Event Code for Perimeter Burglary (131)
01 = The partition number (1)
015 = The zone number (015)
8 = The checksum, computed in the following manner:

a) Add all of the message digits together, using 10 for all '0' digits (1+2+3+4)+(1+8)+(1+1+3+1)+(10+1)+(10+1+5) = 52
b) Find the next highest multiple of 15, in this case 60.
c) Subtract the sum from this value (60-52 = 8)
d) Use the result for the checksum.. If the result is 0, use the digit 'F' (15) for the checksum.

Example 2 – Restoral Message

Account 1234 is reporting a Restore of a Perimeter Burglary Alarm on Zone 15 of Partition 1

The message shall be sent as:

1234 18 3131 01 015 6

where:

1234 = The account number (1234)
18 = The message type used to identify the message as Contact ID
3131 = The Event Qualifier (3) for a restoral, followed by the Event Code for Perimeter Burglary (131)
01 = The partition number (1)
015 = The zone number (015)
6 = The checksum (See Example 1)

Example 3 – Opening Message

User 3 disarms Partition 2 of Account 1234

The message shall be sent as:

1234 18 1401 02 003 5

where

1234 = The account number (1234)
18 = The message type used to identify the message as Contact ID
1401 = The Event Qualifier (1) for an Opening, followed by the Event Code for Open/Close by User (401)
02 = The partition number (2)
003 = The User number (003)
5 = The checksum (See Example 1)

Example 4 – Closing Message

User 5 arms Partition 3 of Account 1234

The message shall be sent as:

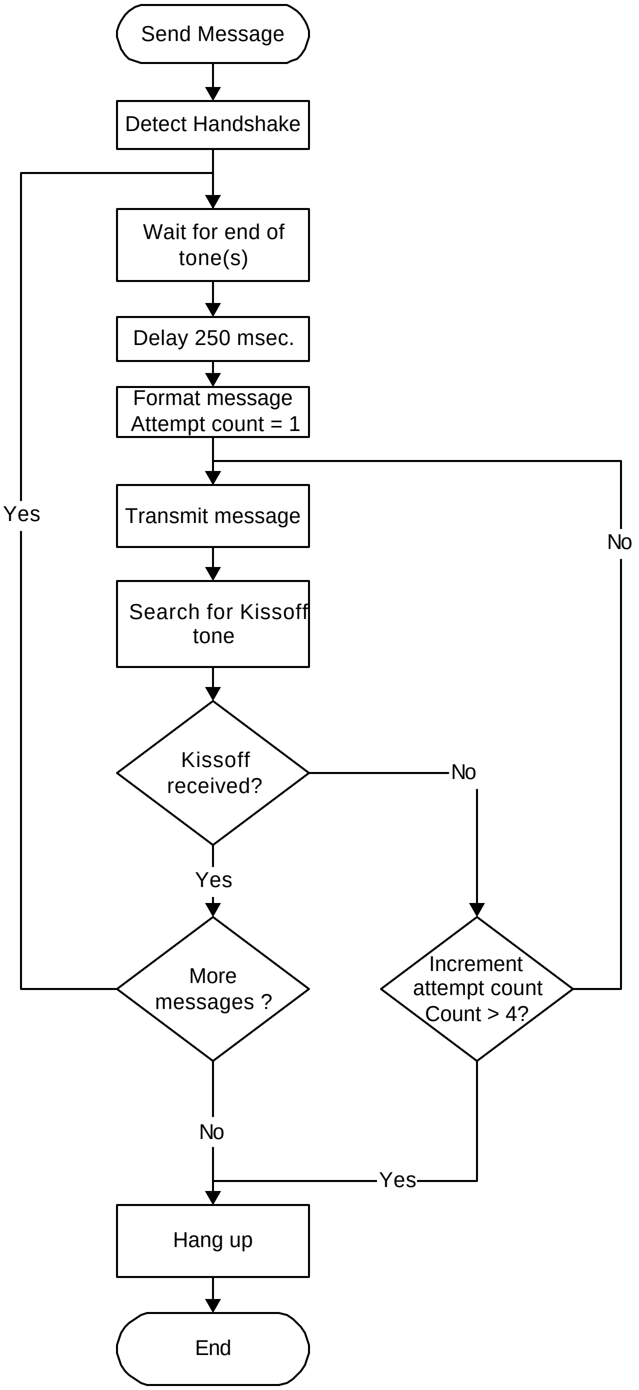
1234 18 3401 03 005 F

where

1234 = The account number (1234)
18 = The message type used to identify the message as Contact ID
3401 = The Event Qualifier (3) for a Closing, followed by the Event Code for Open/Close by User (401)
03 = The partition number (2)
005 = The User number (003)
F = The checksum (See Example 1)

Note the use of ‘F’ since the sum of the message digits is an even multiple of 15.

APPENDIX B: MESSAGE TRANSMISSION FLOWCHART



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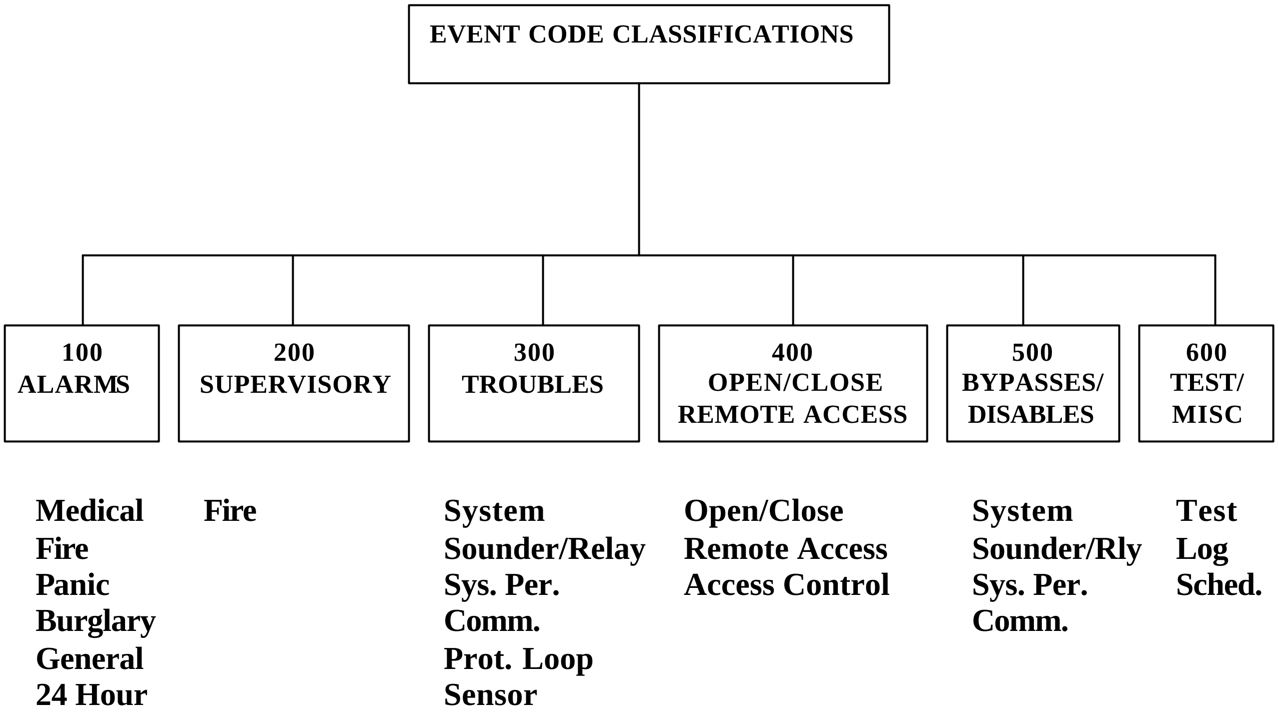
APPENDIX C: EVENT CODES



<u>Notes on Event Code definitions</u>

1) The following table defines the Event Codes used in this protocol.

2) The Data Type identifies the information sent in the CCC field as either Zone number or User number.

3) The value in the CCC field should be set to 000 if no useful information is being sent.

4) Descriptions for the Event Codes will be added in a later revision of this standard.

Event	**Data Type**	**Descriptions** *(to be supplied in a later revision of this standard)*
ALARMS		
Medical Alarms –100		
100 Medical	Zone	
101 Personal Emergency	Zone	
102 Fail to report in	Zone	
Fire Alarms –110		
110 Fire	Zone	
111 Smoke	Zone	
112 Combustion	Zone	
113 Water flow	Zone	
114 Heat	Zone	
115 Pull Station	Zone	
116 Duct	Zone	
117 Flame	Zone	
118 Near Alarm	Zone	
Panic Alarms –120		
120 Panic	Zone	
121 Duress	User	
122 Silent	Zone	
123 Audible	Zone	
124 Duress – Access granted	Zone	
125 Duress – Egress granted	Zone	
Burglar Alarms –130		
130 Burglary	Zone	
131 Perimeter	Zone	
132 Interior	Zone	
133 24 Hour (Safe)	Zone	
134 Entry/Exit	Zone	
135 Day/night	Zone	
136 Outdoor	Zone	
137 Tamper	Zone	

Event	**Data Type**	**Descriptions** *(to be supplied in a later revision of this standard)*
138 Near alarm	Zone	
139 Intrusion Verifier	Zone	
General Alarm – 140		
140 General Alarm	Zone	
141 Polling loop open	Zone	
142 Polling loop short	Zone	
143 Expansion module failure	Zone	
144 Sensor tamper	Zone	
145 Expansion module tamper	Zone	
146 Silent Burglary	Zone	
147 Sensor Supervision Failure	Zone	
24 Hour Non-Burglary - 150 and 160		
150 24 Hour Non-Burglary	Zone	
151 Gas detected	Zone	
152 Refrigeration	Zone	
153 Loss of heat	Zone	
154 Water Leakage	Zone	
155 Foil Break	Zone	
156 Day Trouble	Zone	
157 Low bottled gas level	Zone	
158 High temp	Zone	
159 Low temp	Zone	
161 Loss of air flow	Zone	
162 Carbon Monoxide detected	Zone	
163 Tank level	Zone	
SUPERVISORY		
Fire Supervisory - 200 and 210		
200 Fire Supervisory	Zone	
201 Low water pressure	Zone	
202 Low CO2	Zone	
203 Gate valve sensor	Zone	
204 Low water level	Zone	

Event	**Data Type**	**Descriptions** *(to be supplied in a later revision of this standard)*
205 Pump activated	Zone	
206 Pump failure	Zone	
TROUBLES		
System Troubles -300 and 310		
300 System Trouble	Zone	
301 AC Loss	Zone	
302 Low system battery	Zone	
303 RAM Checksum bad	Zone	
304 ROM checksum bad	Zone	
305 System reset	Zone	
306 Panel programming changed	Zone	
307 Self-test failure	Zone	
308 System shutdown	Zone	
309 Battery test failure	Zone	
310 Ground fault	Zone	
311 Battery Missing/Dead	Zone	
312 Power Supply Overcurrent	Zone	
313 Engineer Reset	User	
Sounder / Relay Troubles -320		
320 Sounder/Relay	Zone	
321 Bell 1	Zone	
322 Bell 2	Zone	
323 Alarm relay	Zone	
324 Trouble relay	Zone	
325 Reversing relay	Zone	
326 Notification Appliance Ckt. # 3	Zone	
327 Notification Appliance Ckt. #4	Zone	
System Peripheral Trouble -330 and 340		
330 System Peripheral trouble	Zone	
331 Polling loop open	Zone	
332 Polling loop short	Zone	
333 Expansion module failure	Zone	
334 Repeater failure	Zone	
335 Local printer out of paper	Zone	
336 Local printer failure	Zone	

Event	**Data Type**	**Descriptions** *(to be supplied in a later revision of this standard)*
337 Exp. Module DC Loss	Zone	
338 Exp. Module Low Batt.	Zone	
339 Exp. Module Reset	Zone	
341 Exp. Module Tamper	Zone	
342 Exp. Module AC Loss	Zone	
343 Exp. Module self-test fail	Zone	
344 RF Receiver Jam Detect	Zone	
Communication Troubles -350 and 360		
350 Communication trouble	Zone	
351 Telco 1 fault	Zone	
352 Telco 2 fault	Zone	
353 Long Range Radio xmitter fault	Zone	
354 Failure to communicate event	Zone	
355 Loss of Radio supervision	Zone	
356 Loss of central polling	Zone	
357 Long Range Radio VSWR problem	Zone	
Protection Loop -370		
370 Protection loop	Zone	
371 Protection loop open	Zone	
372 Protection loop short	Zone	
373 Fire trouble	Zone	
374 Exit error alarm (zone)	Zone	
375 Panic zone trouble	Zone	
376 Hold-up zone trouble	Zone	
377 Swinger Trouble	Zone	
378 Cross-zone Trouble	Zone	
Sensor Trouble -380		
380 Sensor trouble	Zone	
381 Loss of supervision - RF	Zone	
382 Loss of supervision - RPM	Zone	
383 Sensor tamper	Zone	
384 RF low battery	Zone	
385 Smoke detector Hi sensitivity	Zone	
386 Smoke detector Low sensitivity	Zone	
387 Intrusion detector Hi sensitivity	Zone	
388 Intrusion detector Low sensitivity	Zone	

Event	**Data Type**	**Descriptions** *(to be supplied in a later revision of this standard)*
389 Sensor self-test failure	Zone	
391 Sensor Watch trouble	Zone	
392 Drift Compensation Error	Zone	
393 Maintenance Alert	Zone	
OPEN/CLOSE/REMOTE ACCESS		
Open/Close -400, 440,450		
400 Open/Close	User	
401 O/C by user	User	
402 Group O/C	User	
403 Automatic O/C	User	
404 Late to O/C (Note: use 453, 454 instead)	User	
405 Deferred O/C (Obsolete- do not use)	User	
406 Cancel	User	
407 Remote arm/disarm	User	
408 Quick arm	User	
409 Keyswitch O/C	User	
441 Armed STAY	User	
442 Keyswitch Armed STAY	User	
450 Exception O/C	User	
451 Early O/C	User	
452 Late O/C	User	
453 Failed to Open	User	
454 Failed to Close	User	
455 Auto-arm Failed	User	
456 Partial Arm	User	
457 Exit Error (user)	User	
458 User on Premises	User	
459 Recent Close	User	
461 Wrong Code Entry	Zone	
462 Legal Code Entry	User	
463 Re-arm after Alarm	User	
464 Auto-arm Time Extended	User	
465 Panic Alarm Reset	Zone	
466 Service On/Off Premises	User	

Event	**Data Type**	**Descriptions** *(to be supplied in a later revision of this standard)*
Remote Access –410		
411 Callback request made	User	
412 Successful download/access	User	
413 Unsuccessful access	User	
414 System shutdown command received	User	
415 Dialer shutdown command received	User	
416 Successful Upload	Zone	
Access control –420,430		
421 Access denied	User	
422 Access report by user	User	
423 Forced Access	Zone	
424 Egress Denied	User	
425 Egress Granted	User	
426 Access Door propped open	Zone	
427 Access point Door Status Monitor trouble	Zone	
428 Access point Request To Exit trouble	Zone	
429 Access program mode entry	User	
430 Access program mode exit	User	
431 Access threat level change	User	
432 Access relay/trigger fail	Zone	
433 Access RTE shunt	Zone	
434 Access DSM shunt	Zone	
BYPASSES / DISABLES		
System Disables -500 and 510		
501 Access reader disable	Zone	
Sounder / Relay Disables -520		
520 Sounder/Relay Disable	Zone	
521 Bell 1 disable	Zone	
522 Bell 2 disable	Zone	
523 Alarm relay disable	Zone	
524 Trouble relay disable	Zone	
525 Reversing relay disable	Zone	
526 Notification Appliance Ckt. # 3 disable	Zone	
527 Notification Appliance Ckt. # 4 disable	Zone	

Event	**Data Type**	**Descriptions** *(to be supplied in a later revision of this standard)*
System Peripheral Disables -530 and 540		
531 Module Added	Zone	
532 Module Removed	Zone	
Communication Disables -550 and 560		
551 Dialer disabled	Zone	
552 Radio transmitter disabled	Zone	
553 Remote Upload/Download disabled	Zone	
Bypasses –570		
570 Zone/Sensor bypass	Zone	
571 Fire bypass	Zone	
572 24 Hour zone bypass	Zone	
573 Burg. Bypass	Zone	
574 Group bypass	User	
575 Swinger bypass	Zone	
576 Access zone shunt	Zone	
577 Access point bypass	Zone	
TEST / MISC.		
Test/Misc. –600, 610		
601 Manual trigger test report	Zone	
602 Periodic test report	Zone	
603 Periodic RF transmission	Zone	
604 Fire test	User	
605 Status report to follow	Zone	
606 Listen-in to follow	Zone	
607 Walk test mode	User	
608 Periodic test - System Trouble Present	Zone	
609 Video Xmitter active	Zone	
611 Point tested OK	Zone	
612 Point not tested	Zone	
613 Intrusion Zone Walk Tested	Zone	
614 Fire Zone Walk Tested	Zone	

Event	**Data Type**	**Descriptions** *(to be supplied in a later revision of this standard)*
615 Panic Zone Walk Tested	Zone	
616 Service Request	Zone	
Event Log –620		
621 Event Log reset	Zone	
622 Event Log 50% full	Zone	
623 Event Log 90% full	Zone	
624 Event Log overflow	Zone	
625 Time/Date reset	User	
626 Time/Date inaccurate	Zone	
627 Program mode entry	Zone	
628 Program mode exit	Zone	
629 32 Hour Event log marker	Zone	
Scheduling –630		
630 Schedule change	Zone	
631 Exception schedule change	Zone	
632 Access schedule change	Zone	
Personnel Monitoring -640		
641 Senior Watch Trouble	Zone	
642 Latch-key Supervision	User	
Misc. -650		
651 Reserved for Ademco Use	Zone	
652 Reserved for Ademco Use	User	
653 Reserved for Ademco Use	User	
654 System Inactivity	Zone	

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