

Action Codes Reference

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Definition of Terms Used

Action Codes

Action codes are commands in Comforti's unique programming language. A Response (sometimes called Macros in other systems) is a sequence of action codes. Conditional actions allow different conditions to determine what actions are to be performed based on the conditions (called IF-THEN commands)

Action codes require 0,1,2, or more additional parameters. An action code without a parameter (like 8, All Outputs Off) does not need any other information. Action codes such as 75 (Bypass Zone) require one parameter, in this case the zone number placed after the 75. Action Codes like 195 (X10) require 3 parameters - the housecode, unit code and function. You **MUST** always have the exact number of parameters needed by the action. Understanding the rules of action codes is essential for the system to function as you intend it to.

Responses

Responses are programs consisting of 1 or more Actions (commands). Responses are used to perform specific tasks required by the user, e.g. to control appliances, send infrared or X10 signals, arm the security system etc. Responses are triggered by Events which include zone activation and restore, Alarms, arming or disarming the system, X10 codes, IR codes, Time Programs etc. Responses are the key to customizing Comforti's behavior to suit any customer requirement

A response can consist of as little as one action code up to hundreds of action codes. There are 255 Response lines for FS18 (127 for FS17) each containing 6 numbers from 0 to 255. Responses are programmed in Engineer Menu 3,6 or using the Configurator software's Response Wizard. If a response has more than 6 numbers, then this will mean that the next response will be allocated and used by the first response, and will no longer be available as a separate Response. The system recognizes the end of a response by the terminator code 255. If a response consists of six bytes and a terminator (255), then the 255 command will be located on the next response line. That Response cannot be used anymore as it is part of the previous Response number.

Avoid using 255 as a parameter in any Response, as this will terminate the Response entry.

Table 33 in the Worksheet shows the Default Responses supplied with the system. However, there is nothing sacred about these default Responses, as any Response can be reprogrammed as required. Just make sure you know what you are doing, and that the Response is not used by the system. It is recommended that customized responses are bench tested before installing the system

Outputs

Any outputs will be in the OFF state immediately following a system power-up or RESET. This should be remembered when designing a response which may rely upon an output being ON at all times unless chosen to be OFF. This situation can occur during a routine maintenance visit or during a system modification when the system may be powered down as part of testing.

For example, you may have designed a system which uses the 12-volt outputs to switch camera feeds to a monitor. If they are designed to be triggered using the PIRs on the system to select a particular camera then, immediately after power-up you may notice that the monitor will have a blank picture until the first IPR is triggered which in turn will start operating the first response and the switching the first outputs ON. You can use the Startup Response to set up outputs to an initial state.

Counters

Counters can be used to keep count of events or as general purpose storage. Each counter is 8 bits, ie has possible values of 0 to 255. There are 128 Counters in Comfort (from Outside firmware 4.166). Actions which apply to the counters are Get Counter (81), Increment Counter (83), Decrement Counter (84), Load Counter (131) and 31, Get last Counter/ Action 81 (Get Counter value) and 31 (get Last Counter) enable counters to be used in Conditional (IF/THEN) programming.

The value of any counter can be announced on the home control menu by selecting Feedback Type = Counter. This can be used for light level, temperature and other parameters with a range 0 to 255

Flags

Flags are true/false or on/off indicators for use in conditional IF/THEN programming. A Flag can have two states, TRUE (ON) or FALSE (OFF). In Comfort firmware 4.160, the number of flags were increased from 8 to 64. Action 132 is used to handle flags. The state of Flags (on/off) can be announced in the Home Control Menu by selecting Feedback Type = Flag

Skips

The skip function is used in action codes 14,15,16,67,68,69 and 70. It is another way of saying ignore the next sequence of codes until a Marker, dExit or Terminator code. A response using one of the above action codes uses a skip function to say: i@if a value returned from a previous action does not match your desired value, then leave or skip to the end of the response (255) or to the next marker (92 or 193). This is also known as conditional branching. The marker can be inserted within the same response or in another response if a string of responses has been designed to run concurrently.

Markers

A marker is used together with Skip actions. Any action which does a skip because of a condition is met will only skip until a Marker is encountered in the response. The markers are 192 and 193 (exit, also a marker) & 255 (Terminator). The sequence of actions will continue after the Marker in the case of 192 (Marker) and 193 (Exit), but will terminate for 255 (terminator)

Return Value

A return value is a numeric value which the system provides when an action code is used to find out the status of say a zone, output or other parameter so it may be used in performing a function within the next command. Some Action codes like 73 (get value), 77 (Get output), 78 (Toggle output), 79 (get input), 89 (Get Analog Input), provide return values. If an action code does not provide a return value, the return value is unchanged by the action and can be used by subsequent actions. A typical example of use of return values is where the system uses action code 79, 13 (get input state of zone 13) which could be a lux sensor, where the returned value (0 for off, >0 for on) is used to determine if it is dark so that lights may be switched. Another example using action code 79 is 79, 16 (get input state of zone 16) where Zone 16 uses a moisture detector as an override function for say a sprinkler system which is controlled by Time Programs. The action code sequence for turning the sprinklers could use 79 to check the moisture status, before switching any sprinklers ON.

Conditional Branching

A response can be designed to first find out a value or status of a zone and then depending on the answer can then perform from a selection of choices, leave the response completely or do the next actions following a Marker.

Example : Zone Response to turn on Output 1 if Security is armed to AWAY, or turn on Output 2 if armed to Night

73, 0,	Get Security Mode (0=off, 1=away, 2=night, 3=day, 4= Vacation)
68, 1,	Skip to marker (192) if Security is not AWAY
128,1,1,	Actions executed when Security is AWAY. Output 1 ON
192	Marker ends all Skips. Skipped actions will execute after the marker
68,2	Skip to marker (192) if Security is not Night
128,2,1,	Actions executed when Security is Night. Output 2 ON
255	Terminate Response

Note: You do not need to worry about the use of Markers with Configurators If/Then conditional logic commands

Responses with Zone or Alarm Activation

A response may be used to cancel an entry timer, create or skip an alarm condition in certain situations. The response would be used on the particular detectors ON or OFF response. e.g... Response 54 is used to change an immediate zone to an entry zone in Night Mode only, Response 53 is used to change an entry zone to an immediate zone at night only. Where a response is used to measure the behavior of a particular zone and then to cause an alarm function, zone should be set as a momentary or toggle switch zone type and the alarm condition should be created within the design of the response applied to the zone by using action code 88 - Do alarm. This approach is taken when monitoring a vibration detector with a zone sensitivity of 20 ms and a Double Knock filter

Responses within Responses (Nesting of Responses)

Action 74 (Do Response) activates other Responses. This can be very useful, making use of familiar and tested Responses, for example, to turn on outputs 1,2,3, and 4, we would use actions codes 74,1 (Do Response 1, or Output 1 ON), 74, 3 (Do Response or Output 2 ON), 74, 5 (Do Response 5 or Output 3 ON), 74, 7 (Do Response 7, or Output 4 ON), 255 (Terminator). This is shorter than the individual actions to turn on the outputs, which would be 128,1,1 (Output 1 ON), 128,2,1 (Output 2 ON) ,128,3,1 (Output 3 ON) ,128,4,1 (Output 4 ON), 255. Avoid endless nesting of Responses as in the following example:

Response 90: 74,91,255 (Do Response 91)

Response 91: 74,92,255 (Do Response 92)

Response 92: 74, 90,255 (Do Response 90)

This loops endlessly between 90,91 and 91 and will i°crashj± the system. In any case, it is advisable to avoid having more than 2 levels of Nested Responses. .

Action Codes 0 to 63 - Action Code with no parameters

Action	Description	CCL Code	Return value
00	Null		-
01	Announce Zone Name	Say ZoneName	-
02	Reserved		-
03	Reserved		-
04	Start Entry Delay	Start EntryDelay	-
05	Cancel Entry Delay	Cancel EntryDelay	-
06	Exit Terminator (for arming - UK only)	ExitTerminator	-
07	Siren Off (Silence sirens)	Siren Off	-
08	All Outputs Off	AllOutputs Off	-
09	Activate Doorphone.	Activate DoorPhone	-
10	Unbypass All Zones	Unbypass All	-
11	Not Used (Was CMS Dial Test)		-
12	Exit if Z		-
13	Exit if NZ		-
14	Skip to marker Skip all actions until Marker (192)		-
15	Skip to Marker if Zero		-
16	Skip to Marker if Non zero		-
17	Force Arm if Arming	ForceArm	-
18	Reserved		-
19	Reserved		-
20	Require Engineer Reset to Arm	Require Engineer Reset	-
21	Skip Alarm for Zone	Skip Alarm	-
22	Keypad Intercom Request	Keypad Intercom	-
23	Skip Announcement of Zone	Skip Announcement	-
24	Echo Dial out on Keypad	Echo Dialout	
25	Perform Engineer Reset	System Reset	-
26	Stop Door Station Ringer (V4.54)	Stop Ringer	-
27	Reserved		
28	System Reset (V4.85)	System Reset	
29	Announce Time (v4.107)	Say Time	-
30	Force Dialout for Door station (v4.114)	Force DSDialout	-
31	Get last Counter value	Get LastUcmCounter	Counter value
32	Convert degrees F to C (v5.172)	Convert F to C	Degrees C
33	Announce Number (v5.172)	Announce Number	-
34	Announce Number followed by "Degrees" (v5.172)	Announce Degrees	-
35	Save Value in Last Counter (v5.172)	Save Last Counter	-
36	Get Last Sensor (v5.172)	Get Last Sensor	Sensor Value

Action	Description	CCL Code	Return value
37	Save Last Sensor (v5.172)	Save last Sensor	-
38	Get High Byte of Addition or Product (v5.172)	Get High Byte	value
39	Get Negative value (v5.172)	Get Negative	- value
40	Convert degrees C to F (v5.172)	Comvert C to F	Degrees F
41	Disable Ringer (v5.172)	DisableIRinger	-
42	Keypad Family Care (v5.172)	Keypad Family Care	
43	Clear Event Log (v5.172)	Clear Eventlog	

Action Codes 64 to 127 - Action Codes with 1 parameter

Action	Description	Param	CCL Code	Return Value
64	Siren Activate siren type signal if siren off	Siren Type 1-20	Siren <i>Siren_name</i>	-
65	Bell Output	On=1, Off=0	Bell On Off	-
66	Strobe Output	On=1, Off=0	Strobe On Off	-
67	Skip if equal Skip to marker if input = Value	Value	See Conditional Programming	-
68	Skip if not equal Skip to marker if input <> Value	Value		-
69	Skip if >=	Value		-
70	Skip if <	Value		-
71	Change Mode (autoarm)	Mode 00 = Security off 01 = Away 02 = Night 03 = Day 04 = Vacation	AutoArm SecurityOff AwayMode NightMode DayMode VacationMode	-
72	Keyswitch Arm		KeyswitchArm SecurityOff AwayMode NightMode DayMode VacationMode	-

Action	Description	Param	CCL Code	Return Value
73	Get System Parameter Return parameter value	0 Security Mode		0 = Security off 1 = Away 2 = Night 3 = Day 4 = Vacation
		1 secs 0-59	Seconds	
		2 minutes 0-59	Minutes	
		3 hour 0-23	Hours	
		4 day 1-31	Day	
		5 month 1-12	Month	
		6 year 0-99	Year	
		7 century 0-99	Century	
		8 day of week 1-7	Day Of Week	
		9 alarm state 0-3	AlarmState	
		10 Arming	Arming	
		11 Family Care	-	
		12 Entry Alert	EntryAlert	
		13 Need Eng Reset	RequireEngineer Reset	
		14 Remote Access	RemoteAccess	
		15 Strobe on/off	Strobe	
		16 Keypad ID	KeypadId	
		17 Siren Type	SirenType	
		18 DoorStation ID	DoorStationId	
		19 Holiday	Holiday	
		20 Last Zone	LastZone	
		21 Alarm Type	AlarmType	
		22 Dialing Out	DialingOut	
		23 Night		
		24 User No	UserNo	
		25 Away/Vacation	AwayHoliday	
		26 Offhook	Offhook	
		27 Last Zone On/Off	LastInputZone	
		28 Reserved		
		29 Reserved		
		30 LastSecurity Mode		
		31 GSM Network strength		0 to 4
74	Do User Response	Response no 1-255	Do Response_name	-
75	Bypass Zone Zone will return to normal when disarmed to Security off mode.	Zone No	Bypass Zone_name	-
76	Unbypass Zone	Zone No	Unbypass Zone_name	-

Action	Description	Param	CCL Code	Return Value
77	Get Output State	Output No		NZ=ON, 0=OFF
78	Change Output State	Output No	Toggle Output_name	NZ=ON, 0=OFF
79	Get Input State	Zone Number No		NZ = ON, 0=OFF
80	Reserved			-
81	Get Value of Counter Number	Counter 0-max		Count
82	Do Battery Test . If time=0, indefinite	Minutes (1-254)	Test Battery For n Minutes	-
83	Increment Counter Number	Counter 0-max	Increment Counter_name	Count
84	Decrement Counter Number	Counter 0-max	Decrement Counter_name	Count
85	Stop Timer 1-max	Timer 1 to max	Stop Timer Timer_name	-
86	Check if Timer 1 to 8 is running	Timer 1 to max		NZ = ON, 0=OFF
87	Reserved	-		-
88	Do Alarm Type 0-31, report User	Alarm Type 1-31	AlarmUser AlarmType_name	-
89	Read Analog Input (Not on LEM Inputs)	Input No		0 to 255
90	Switched Aux Supply ON/OFF	ON=1, OFF=0	Aux On Off	-
91	Go to Keypad menu	Menu No	Keypad Menu Menu_name	-
92	Engineer Sign In Enable	ON=1, Off=0	Engineer Enable Disable	-
93	Assign Keypad for Baby Monitor	Keypad No 1-8	Baby Keypad n	-
94	Assign Keypad to zone for Voice Station monitoring	Keypad No 1-8	Voice Keypad n	-
95	Call Screening on/off	ON=1, OFF=0	CallScreening On Off	-
96	Set Message Tag for recording (Message Tag)	Message Tag	MessageTag Greeting Alarm Mailbox n Reminder n MailboxName n	-
97	Activate Reminder Message	Reminder 1-8	Reminder n	-
98	Daylight Saving Time Adjust (v4.17)	+1 hr = 1, -1 hr = 2	DSTAdjust +1 -1	-
99	Set Authorization Code for Keypad menu (v4.17)	Authorization value	Authorise option+ option + j-+ optio where option = LocalDisarm LocalArm RemoteDisarm RemoteArm AlarmDisarm SecurityMenu HomeControl Program	-
100	Limit Dialout to Phone settings (v4.17)	Phone value	Limit Dialout n+n+j-+ where n = 1-8	-

Action	Description	Param	CCL Code	Return Value
101	Select Parameter (v4.20)	Parameter 0-255	Set Parameter n	-
102	Do Alarm Type 0-31, report Zone (v4.21)	Alarm Type 1-31	AlarmZone AlarmType_name	-
103	Load Counter with last action Value (v4.50)	Counter 0-max	Set Counter_name	Result
104	Incoming value - Counter value (v4.50)	Counter 0-max	Subtract Counter_name	Result
105	AND Input with Incoming value (V4.76)	Input 1-64	AndInput Zone_name	Result
106	OR Input with Incoming value (V4.76)	Input 1-64	OrInput Zone_name	Result
107	XOR Input with Incoming value (v4.76)	Input 1-64	XorInput Zone_name	Result
108	OMIT Input (v4.85)	Input 1-64	Omit Zone_name	-
109	Set X10 Preset Dim level and cycles to dim/bright (4.97)	Dim Level 0 to 31	X10 DimLevel n	-
110	Check New messages in user mailbox	User 1 to 8		NZ=messages
111	Start Door Station Timer (V4.131)	Time (secs)	Start DSTimer n	
112	Set Extended Zone Sensitivity count (V4.232)	Count 1 to 5		
113	Branch (V4.232)	Signed offset -128 to +128 for branch		-
114	Branch if zero (V4.232)			-
115	Branch if not zero (V4.232)			-
116	Get Sensor Register (V5.041)	Sensor Register 0 to 31		Sensor Value 0 to 255
117	Change Entry Delay (V5.205)	Time (secs)	Change Entry Delay	-
118	Reset Module	ID of Module		
119	Save to Event Log	Tracking Event 0-255		
120	Incoming value - Counter value	Sensor No	Subtract Sensor_name	Result
121	Load Sensor no with last action Value	Sensor no		
122				

Action Codes 128 to 183 - Action Codes with 2 parameters

Action	Description	Param 1	Param 2	CCL Code	Return Value
128	Output on/off	Output number 1-64 129-192 (SCS/RIO)	ON = 1, OFF=0 Change = 2 Pulse 1 sec=3 Flash 1 sec=4	Output Output_name On Off Toggle Pulse Flash (Output name \$LastActionValue signifies the value returned by the previous action)	-
129	Infrared Command	IR. Number 1-32	Output 1-64	IR Code IrCode_name To Output_name	-
130	Pulse Output	Pulse width 1-255 (50 ms units)	Output 1-64	Pulse Output_name For n (n = 50 ms units)	-

Action	Description	Param 1	Param 2	CCL Code	Return Value
131	Load Counter No with value	Counter 0-max	Load Value 0-254	Set Counter_name = value	Counter Value
132	User Flags 1-16	Flag No 1-16	Clear = 0, Set = 1 Check = 2 Toggle = 3	Clear Set Toggle Flag Flag_name (For check, See Conditional Programming)	
133	Play Reminder Message on Keypad or Door Station (Door Station from v4.101)	Reminder No (1-8)	Keypad No 1-8 DP 49 to 51 0 for all KP	Reminder n On Keypad n	-
134	Keypad Menu and selection (v4.23)	Menu No	Selection from menu 0-*	Keypad Menu Menu_name Selection key	-
135	Record Message on Door Station (v4.23)	Mailbox 1-8	Elapsed Time	Record Mailbox n After n Seconds	
136	Virtual Outputs report to UCM	Output 0 - 254	Value 0-254	VirtualOutput VirtualOutput_name value (value = 0-254 or On Off)	
137	Reserved				-
138	UCM Dial Up command	0=Off, 1=On, 2 = when line free	id	UCM n Hangup Dialout DialOutWhenFree	-
139	Keypad Announcement on/off	id	1=on, 0 = off	Keypad n Broadcast Enable Disable	-
140	X10 extended codes	Ext Data	Ext. Command	X10 Extended data command	-
141	Do Response (Double byte)	Response (low byte)	Response (high byte)	Do Response_name	-
142	Branch if >= (v4.232)	Signed offset -128 to +128 for branch	+ve Value to compare		-
143	Branch if < (v4.232)				-
144	Exit if =, <>, >=, < (v4.232)	0 = Exit if = 1 = Exit if <> 2 = Exit if >= 3 = Exit if <	+ve value to compare		-
145	Branch if =	Signed offset -128 to +128 for branch	+ve value to compare		-
146	Branch if <>				-
147	Time Program Enable/disable (v5.172)	Timeprogram #	0=off, 1 = on		-
148	Multiply (v5.172)	0,- immediate 1= counter, 2= sensor	Immediate, counter or sensor	Multiply	Product
149	Add (v5.172)	0,- immediate 1= counter, 2= sensor	Immediate, counter or sensor	Add	Sum
150	Sunrise/Sunset Offset (v5.172)	0 = sunrise, 1 = sunset	Offset (signed)		-
151	Initialse Sensor	Sensor no	Sensor value		

Action	Description	Param 1	Param 2	CCL Code	Return Value
152	Enable/disable User Code	User No 1-16, 0 = all	0=Off, 1=On 2=check		
153	Load 2 Bytes Constant	Least Significant Byte	Most Significant byte		Value
154	Virtual Input On/Off	Input 1 to Max	0=Off, 1=On		
155	Send Message to phone	Alarm Type	Message No		-
156	Keypad Backlight On/off	Keypad ID	0=Off, 1 = on		-
157	Divide	0= immediate, 1 = counter, 2 = sensor	Immediate, counter or sensor no		value

Action Codes 184 to 191 - Action Codes with 3 parameters

Action	Description	Param 1	Param 2	Param 3	CCL Code
184	Branch if = 2 bytes constant	Signed offset -128 to +128 for branch	Least Significant Byte	Most Significant byte	
185	Branch if <> 2 bytes constant				
186	Branch if >= 2 bytes constant				
187	Branch if < 2 bytes constant				
188	Exit if = 2 bytes constant	0	Least Significant Byte	Most Significant byte	
188	Exit if <> 2 bytes constant	1			
188	Exit if >= 2 bytes constant	2			
188	Exit if < 2 bytes constant	3			
189	Blinds Control	Blind No	Operation		
190	Inline Delay	Timer 1 to 64	Seconds/256	Seconds	Inline Delay n Seconds Using Timer_name

Action Codes 192 to 255 - Action Codes with any number of parameters

Action	Description	Param 1	Param 2	Param 3	Param 4	CCL Code
192	Marker, End of Skip				-	
193	Exit Response (marker)				-	
194	Start User Timer	Timer 1 to 64	Seconds/256	Seconds	Response	Do Response_name After n Seconds Using Timer_name
195	X10 Command	Housecode A=65 to P=80	Unit Code 01 to 16	Function Code	-	X10 hu AllUnitsOff AllLightsOn On Off Dim Bright AllLightsOff Extended1 Extended2 Extended3 (h = housecode, u = unit)
196	Invert Skip Flag				-	InvertSkip
197	Send Data to UCM (4.160)	id	data	data	..	Send RS232 n hh,hh,...,hh (hh = 00-FF)

Action	Description	Param 1	Param 2	Param 3	Param 4	CCL Code
198	Copy Master Counter (4.177)	Master counter	Counter1	counter2	..	Copy Counter Counter_name To Counter_name[, Counter_name,...]
199	Announce Words (v4.233)	word1	word2	..	..	
200	Open Door (5.049)	ID	Door No	Duration (100 ms units)		
201	Send Value					
202	Initialise Sensor/Counter with 2 byte value	Counter, sensor	Counter/ Sensor No	Least Significant Byte	Most Significant Byte	
203	Branch Comparison 2 bytes	Signed Offset for Branch	Least Significant Byte	Most Significant Byte	=, <, >=, <	
255	Terminate Response				-	

Classification of Action Codes in Response Wizard

In ConfiguratorCs Response Wizard, action codes are classified into the following categories;

Security

Activate DoorPhone
 Announce Zone Name
 Cancel Entry Delay
 Change Mode (autoarm)
 Do Alarm Type, report User
 Do Alarm Type, report Zone
 Engineer Sign in Enable
 Exit Terminator
 Force Arm if Arming
 Force Dialout for Door Station
 Keyswitch Arm
 Limit Dialout to Phone Settings
 Set Authorisation Codes
 Skip Alarm for Zone Response
 Start Door Station Timer
 Start Entry Delay
 Stop Door Station Ringer
 Unbypass All Zones

Action Code

9
 1
 5
 71, mode#
 88, user#
 102, zone#
 92, onoff#
 6
 17
 30
 72, mode#
 100, dial#
 72, users#
 21
 111, secs#
 4
 26
 76

Keypad

Activate Reminder Message
 Announce Time
 Assign Keypad for Baby Monitor
 Assign Keypad to Zone for Voice Station
 Call Screening on/Off
 Echo Dialout on Keypad
 Go to Keypad Menu

Action Code

97,reminder#
 29
 93, keypad#
 94, keypad#
 95, onoff#
 24
 91, menu#

Keypad Announcements on/off
Keypad Intercom Request
Keypad Menu and Selection
Record Message on Door Station
Reminder Message on KP/DP
Select Parameter
Set Message Tag for Recording
Skip Announcement of Zone

Input

AND Input with last Action value
Bypass Zone
Omit Zone
OR Input with last Action value
Unbypass Zone
XOR Input with last Action value

Output

Pulse Output
Activate Siren
All Output off
Bell Output
Infrared Command
Send Rs232
Set Output
Siren Off
Strobe Output
Toggle Output State
UCM Dialout
Virtual Output report

Counter

Copy Counter
Decrement Counter
Increment Counter
Initialise Counter
Load Counter with Last Action value
Subtract Counter from Last Action value

Flag

Clear Flag
Set Flag
Toggle Flag

Do

Do Response after Timer
Do User Response
Stop Timer

X10

Set No of Cycles for Bright/Dim
Set Extended Data & Command
X10 command

139, id#, onoff#
22
134, menu#, key#
135, mailbox#, secs#
133, reminder#, id#
101, param#
96, tag#
23

Action Code

105, zone#
75, zone#
108, zone#
106, zone#
76, zone#
107, zone#

Action Code

130, 50ms#, output#
64, siren#
08
65, onoff#
129, ircode#, output#
197, ...
128, output#, onoff#
7
66, onoff#
78, output#
138, onoff#, id#
136, output#, value#

Action Code

98, ctr1#, ctr2#, ..
84, ctr#
83, ctr#
131, ctr#, value#
103, ctr#
104, ctr#

Action Code

132, flag#, 0
132, flag#, 1
132, flag#, 3

Action Code

194, timer#, thi#, tlo#, resp#
74, resp#
85, timer#

Action Code

109, dimlevel#
140, data#, command#
195, house#, unit#, func#

Control

Daylight Saving Time Adjust
Engineer Reset
Require Engineer Reset to Arm
Switched Aux Supply On/Off
System Reset

Test

Do Battery Test
Do CMS Dial Test
Generate DTMF Tone
Generate Tone
Offhook
OnHook
Stop DTMF/Tone

Get Value

Active Alarm Type
Alarm State
Analog Input
Counter
Date & Time - seconds
Date & Time - minutes
Date & Time - hours
Date & Time - day
Date & Time - month
Date & Time - year
Date & Time - century
Door Station ID
Flag
Input
Keypad ID
Last Counter Value
New Messages for User
Output
Security Mode
Siren Type
System Parameter - arming
System Parameter - Entry Alert
System Parameter - Require Engineer Reset
System Parameter - Remote Access
System Parameter - Strobe
System Parameter - Holiday
System Parameter - last active zone
System Parameter - dialout
System Parameter - Awa/Vacation Mode
System Parameter - Offhook
System Parameter - last input
Timer Running
User Number

Action Code

98, secs#
25
20
90, onoff#
28

Action Code

82, mins#
Not Used
Not Used
Not Used
Not Used
Not Used
Not Used

Action Code

73,21
73,89
89,input#
81, ctr#
73, 1
73, 2
73, 3
73, 4
73, 5
73, 6
73, 7
18
132, flag#, 2
79, input#
73,16
31
110, user#
77, output#
73, 0
73, 17
73, 10
73, 12
73, 13
73, 14
73, 15
73, 19
73, 20
73, 22
73, 25
73, 26
73, 27
86, timer#
73, 24

Description of Actions

Action Code	Description	Resp Wizard Category	CCL Code
1	Announce Zone Name	Keypad	SayZoneName

Announces the zone activated. This action can be used only in the Zone Response to cause the zone name to be announced when the zone is activated. This action is NOT effective if not used in a Zone Response

Action Code: 01

Example:

01 causes the zone to be announced when it is triggered. This action must be part of a Zone ON or OFF response.

If Action 1 is in the Zone OFF Response, the system will announce when the Zone goes OFF. The word for i°Off± should be programmed iZone OFF Word (Location 1689). If Location 1689 is 0, the Comfort will announce the zone name only when the zone turns off.

Action Code	Description	Resp Wizard Category	CCL Code
4	Start Entry Delay	Security	Start EntryDelay

Starts an Entry Delay. The Security system must be disarmed before the end of the Entry Time otherwise an Intruder alarm will occur. This action is normally used in a Zone Response.

Example:

The following actions when assigned to a Zone Response will cause an entry delay when the zone is triggered at Night. This is used in response 54.

73,00 get security Mode (0=Security off, 1 = Away, 2= Night, 3= Day, 4= Vacation)
 68,02 skip to marker if not Night
 04 starts Entry Delay in Night Mode

Action Code	Description	Resp Wizard Category	CCL Code
5	Cancel Entry Delay	Security	Cancel EntryDelay

Cancels the entry delay. Normally used in a zone response to cancel entry delay in one of the security modes

Example: The following actions when assigned to the zone response of the entry door will cancel the entry delay at Night, and cause an Immediate alarm when the Entry door is opened at night. Example: Response 53 when assigned to the zone response of the entry door will cancel the entry delay if it is triggered at Night instead causing an Immediate alarm when the Entry door is opened at Night only.

73,00 get security Mode (0=Security off, 1 = Away, 2= Night, 3= Day, 4= Vacation)
 68,02 skip to marker if not Night
 05 cancels Entry Delay in Night Mode

Action Code	Description	Resp Wizard Category	CCL Code
6	Exit Terminator	Security	ExitTerminator

Exit Terminator is a positive confirmation to arm the system to Away or Vacation mode, used in UK systems. When this option is set, the exit terminator needs to be activated after the entry door is closed and all protected zones are clear (or open zones are auto-bypassed by force-arming) and may be combined with the doorbell switch by using Response 67 as the zone ON response. The Exit Terminator is usually a normally open push-button programmed as a Momentary Switch Zone Type. The Zone ON response performs the Exit Terminator action described here.

Action Code	Description	Resp Wizard Category	CCL Code
7	Siren Off	Security	Siren Off

Silences the sirens. Be careful not to use the action in any way that unintentionally will switch off the siren during an Intruder alarm.

Example:

07,64,15 turns off the internal speaker and external 12V siren then sounds siren type 15 (chime)

Action Code	Description	Resp Wizard Category	CCL Code
8			

Turns off all outputs 1- to 64. All open-collector outputs are turned off. This also includes the status LEDs on outputs 6 - 8 and any stand-alone comms trigger inputs and other devices such as relays which may be driven by an output, so only use it very carefully if at all. If you don't wish to switch all outputs OFF, they can still be managed separately using the 128 action to individually switch the required outputs OFF.

Example:

08 turns off all outputs 1 to 64

Action Code	Description	Resp Wizard Category	CCL Code
9	Activate Door Station	Keypad	Active Doorphone

Activates the Door Station function via a switch zone type

If Security off or night mode, rings the Home phone and gives the Door Station menu. If Away or Vacation mode, starts dial out to the programmed numbers in the Door Station alarm type.

Example:

09 Activates the Door Station

This action allows a pushbutton connected to a zone to activate the door Station.

DO NOT use this action with a Door Station Doorbell Response.

Action Code	Description	Resp Wizard Category	CCL Code
10	Unbypass All Zones	Security	Unbypass All

Unbypasses all zones.

Action Code 1: 10

Example:

10 Unbypass all zones

When a zone is unbypassed and is in an active state for the security mode, it will cause an alarm. For example, unbypassing an open window in Night or Away mode will cause an alarm.

11 - Not Used

Was CMS Dial Test

Action Code	Description	Resp Wizard Category	CCL Code
12	Exit Response if Zero	If	(conditional programming)

Exit Response if input value is zero

This action ends the Response if the Input value is Zero

Example:

73,00 Get Security Mode (0=Security off, 1 = Away, 2= Night, 3= Day, 4= Vacation)

12 Exit if zero (ie security off mode)

(actions) Actions executed if not Security off Mode

Note: EXIT if Zero does not act as a marker. This action does not clear skip conditions.

Action Code	Description	Resp Wizard Category	CCL Code
13	Exit Response if not zero	If	(conditional programming)

Exit Response if input value is not zero

This provides the ability to activate different code sequences depending on an input value (conditional branching).

Example:

73,00 Get Security Mode (0=Security off, 1=Away, 2=Night, 3=Day, 4=Vacation)

13 Exit if not zero (ie not security off mode)

(actions) Actions executed if Security off Mode

Note: EXIT if Not Zero does not act as a marker. This action does not clear skip conditions

Action Code	Description	Resp Wizard Category	CCL Code
14	Skip to Marker	-	-

Skips all actions until Marker action (192) or Exit (193) is encountered. Actions execution continues after the Marker.

Example:

14 Skip to marker

(actions) these actions are not executed

192 Marker

The Response will continue executing after the Marker.

Exit (193) also acts as a Marker. This action is not commonly used, compared to Skip based on conditions, e.g. Skip if Zero, Skip if Not Zero etc

Action Code	Description	Resp Wizard Category	CCL Code
15	Skip to Marker if Zero	If	(conditional Programming)

Skips all actions until the Marker action (192) or Exit (193) is encountered if the input value (return value from the previous action) is zero. This provides the ability to activate different code sequences depending on a certain condition.

73,00 Get Security Mode (0=Security off, 1 = Away, 2= Night, 3= Day, 4= Vacation)

15 Skip to marker if Zero (Security off Mode)

(actions) Actions executed if not Security off mode

193 exit response if not Security off Mode (exit also acts as a marker)

(actions) actions executed if not Security off mode

Action Code	Description	Resp Wizard Category	CCL Code
16	Skip to Marker if Not Zero	If	(conditional Programming)

Skips all actions until the Marker action (192) or Exit (193) is encountered if the input value (return value from the previous action) is not zero. This provides the ability to activate different code sequences depending on a certain condition.

73,00 Get Security Mode (0=Security off, 1 = Away, 2= Night, 3= Day, 4= Vacation)

16 Skip to marker if not Zero (not Security off Mode)

(actions) Actions executed if Security off mode

193 exit response if Security off Mode (exit also acts as a marker)

(actions) actions executed if not Security off mode

Action Code	Description	Resp Wizard Category	CCL Code
17	Force Arm	Security	Forcearm

If System is arming, Force-arm ie auto-bypass open zones.

Action Code	Description	Resp Wizard Category	CCL Code
20	Require Engineer Reset to Arm (UK only)	Security	Require Engineer Reset

This action prevents the system from being armed, until Engineer Reset is performed. Engineer Reset is accomplished by entering the Engineer code either local or remotely.

Access to the Engineer Menu must first be enabled by the user by pressing F 0 or using their Program code and Menu 3,4,1 for ON, but when an engineer reset condition has arisen due to this action code (20) being activated in an alarm type, the system automatically enables Engineer access allowing the Engineer to sign-in locally or remotely to reset the system just on this occasion. Once the Engineer has reset the system, subsequent access must be authorized again by the user using their program code.

This is a requirement for UK monitored systems only, which prevents users from rearming their system after an alarm has occurred until the engineer has verified the circumstances of the alarm

Action Code	Description	Resp Wizard Category	CCL Code
21	Skip Alarm	Security	Skip Alarm

This action should only be applied to a Zone response. It prevents the Zone Alarm from being activated for that occurrence only. However, the zone activation is reported in the Event Log and Alarm History if the zone is not inactive. This is commonly used for i°soak test;±, to troubleshoot a suspected detector for false alarm

Action Code	Description	Resp Wizard Category	CCL Code
22	Keypad Intercom Request	Keypad	Keypad Intercom

When assigned to a Keypad Response, puts the Keypad as originator of an intercom broadcast. All other keypads can hear what is said on the originating Keypad. When a key is pressed on any of the other keypads, a two way communication path is opened between the two keypads. Other keypads are turned off.

Action Code	Description	Resp Wizard Category	CCL Code
23	Skip Announcement of Zone	Keypad	Skip announcement

When assigned to a Zone Response, prevents the zone from being announced on the Keypad when activated. This may be used to stop zone announcements for zones on the entry path, in order to avoid disturbing members of the household who may be sleeping. Entry and exit path zones are announced on the keypads by default.

Example: to prevent zone on the entry path from being announced, use the following actions assigned to the zones on the entry path:

73,12 get entry alert state (0 means not in entry alert, 1 means in entry alert)
12 Exit if Zero (ie exit if not entry alert).
23 Skip announcement.

Action Code	Description	Resp Wizard Category	CCL Code
24	Echo Dialout	Keypad	Echo Dialout

This action allows the dial out to be heard on the Keypad, just like in Dial Test. This echo mode is automatically turned off at the end of the dial out sequence and when the system is disarmed. This can be assigned to a switch or a Keypad function temporarily for troubleshooting dial out problems.

From Firmware 4.23

Action Code	Description	Resp Wizard Category	CCL Code
25	Engineer Reset (UK Only)	Security	Engineer Reset

Performs an Engineer Reset, which allows the security system to be armed again following an alarm. This action is not normally necessary, as Entering Engineer Menu will perform an Engineer Reset.

Action Code	Description	Resp Wizard Category	CCL Code
26	Stop Door Station Ringer	Keypad	Stop Ringer

This action stops the local phone ringer. It may be used in a Zone Response for the front door or a PIR to stop ringing the phones when the door is opened.

Example

26 Stop ringer

This Response can be assigned to the Front Door Zone, so that opening the front door stops the door station chime and phone ringing

From V4.54

Action Code	Description	Resp Wizard Category	CCL Code
28	System Reset	Control	System Reset

Performs a System Reset, similar to pressing the RESET button on the control panel and selecting Engineer Menu 7,4,3. This action is seldom needed.

From V4.85

Action Code	Description	Resp Wizard Category	CCL Code
29	Announce Time	Keypad	Say Time

Causes the system to announce the current time on the keypads. This can be used in conjunction with the Hourly response in Location 1845 for an hourly time announcement or programmed at certain hours. It can also be used with a keypad function key or switch to trigger time announcement. From v4.107

Action Code	Description	Resp Wizard Category	CCL Code
30	Force Door Station Dialout	Security	Force DSDialout

When this action is used in the Door Station Response, it forces a dialout even if the system is not armed to away. From V4.114

Example:

The following response used in Location 1691 will force door station dialout if later than 8 PM. Before 8 PM the dialout depends on whether the system is armed to away, as usual.

73,3 Get Time (hours)
70,20 Skip if < 20 ie 8 PM
30 Door Station Dialout
255 Terminator

Action Code	Description	Resp Wizard Category	CCL Code
31	Get Last Counter	If, Counter	If LastUCMCounter

The UCM05 has a command C! which can set counters with any 8-bit value. When Comfort receives a counter value through the C! Command, or UCM/KNX, or UCM/Cbus, a Response associated with the Counter address can be activated. Each Counter triggers a Counter Response. In the response, the counter value can be read and based on the value can trigger alternative actions. Action 81 (Get Counter value)

can be also used to check the value of a counter address but the counter number needs to be specified unlike Action 31. Action 31 gets the value of the last counter address received from the UCM05, UCM/CBUS or other UCMs without having to specify the counter address, so it facilitates this programming and shortens the code.

E.g.

```
31          Get value of last counter from UCM
70,128     Skip if < 128
128,3,1    Output 3 ON
193       Exit
128,3,0    Output 3 Off
```

This response turns on output 3 if the value of the counter received is ≥ 128 or turns off Output 3 if the counter is < 128 .

Action 31 should be employed in the Counter response. If used in other responses not associated with the counter, the danger is that you may not be sure which was the last counter to update this value. Also see Action 35 - Save Value in Last Counter From Outside 4.122

Action Code	Description	Resp Wizard Category	CCL Code
32	Convert degrees F to C	Miscellaneous	Convert F to C

This action converts a value in degrees Fahrenheit to Celcius

Eg the following response converts a number in Counter 4 from Fahrenheit to celcius and announces it on all keypads

```
81, 04     Get Counter 4
32         Convert F to C
34         Announce number followed by "degrees"
```

From Firmware 5.172

Action Code	Description	Resp Wizard Category	CCL Code
33	Announce Number	Keypad	Announce Number

This action announces a number which was returned by the previous action

Eg

```
81, 11     Get Counter 11
32         Announce number /.
```

From Firmware 5.166 (10 Feb 2009)

Action Code	Description	Resp Wizard Category	CCL Code
34	Announce Number "degrees"	Keypad	Announce Degrees

This action announces a value which was returned by the previous action followed by "degrees"

Eg the following response announces a number in Counter 5 followed by "degrees" on all keypads

```
81, 05     Get Counter 5
34         Announce number followed by "degrees:"
```

From Firmware 5.166 (10 Feb 2009)

Action Code	Description	Resp Wizard Category	CCL Code
35	Save Value in Last Counter	Counter	Save Last Counter

Saves the value from the previous action in the last received Counter. The value from last action is normally from a Get parameter action which returns a value eg 73,1 Get seconds. The Last Counter is the counter number received from an external device which sets the counter value like UCM C! Command or UCM/KNX or UCM/CBus

Action Code: 35

Example:

Response assigned to Counter

31 Get Value from Last Counter

148,0 2 Multiply value by 2

35 Save value in Last Counter

This can be a counter Response assigned to a Cbus or KNX (EIB) Group address. It multiplies the value of the counter by 2 and saves the value back to the same counter. Overflow of the counter value is ignored in this example

From Firmware 5.172

Action Code	Description	Resp Wizard Category	CCL Code
36	Get Last Sensor	If	If Last Sensor

The UCM05 has a command s! which sets Comfort Sensor Registers (0 to 31 with Ultra II) with any 8-bit value. When Comfort receives a sensor value through the C! Command, or UCM/KNX, or , a Response associated with the Sensor address can be activated. Each Sensor register set by a UCM triggers a Sensor Response. In the response, the sensor value can be read and based on the value can trigger alternative actions. Action 116(Get sensor value) can be also used to check the value of a sensor address but the sensor number needs to be specified unlike Action 36. Action 36 gets the value of the last sensor number received from the UCM05, or UCM/KNX or other UCMs having to specify the sensor number, so it facilitates this programming and shortens the code.

E.g.

36 Get value of last sensor from UCM

70,128 Skip if < 128

128,3,1 Output 3 ON

193 Exit

128,3,0 Output 3 Off

This response turns on output 3 if the value of the counter received is >= 128 or turns off Output 3 if the sensor value is < 128.

Action 36 should be employed in the Sensor response. If used in other responses not associated with the sensor, the danger is that you may not be sure which was the last sensor to update this value. Also see Action 37 - Save Value in Last Sensor

From Firmware 5.172

Action Code	Description	Resp Wizard Category	CCL Code
37	Save Value in Last Sensor	Sensor	Save Last Sensor

Saves the value from the previous action in the last received Sensor. The value from last action is normally from a Get parameter action which returns a value eg 73,1 Get

seconds. The Last Sensor is the sensor number received from an external device which sets the sensor value like UCM s! Command or UCM/KNX or other UCM

Action Code: 37

Example:

Response assigned to Sensor

36 Get Value from Last Sensor

148,0 2 Multiply value by 2

37 Save value in Last Sensor

This can be a sensor Response assigned to a KNX (EIB) Group address or from other UCMs. It multiplies the value of the sensor by 2 and saves the value back to the same sensor. Overflow of the sensor value is ignored in this example

From Firmware 5.172

Action Code	Description	Resp Wizard Category	CCL Code
38	Get Result High Byte	Misc	Get High Byte

This action returns the most significant value of a Multiply (Action 148) or Add (Action 149) operation where there is an overflow in the result of > 255

Eg

81,10 get Counter 10

148,0, 12 Multiply by immediate value 12

103, 8 Save value in Counter 8

38 Get High Byte of Result

103,9 Save Value in Counter 9

In the above example, if Counter 10 had a value of 100 and was multiplied by 12, the result is 1200 is is equivalent to hexadecimal 04B0. The value B0 Hexadecimal or 176 decimal is saved in Counter 8 and the higher byte value 04 is saved in counter 9.

From Firmware 5.172

Action Code	Description	Resp Wizard Category	CCL Code
39	Get Negative	Misc	Get Negative

This action returns the negative of the return value from the last action

Eg

81, 20 get Counter 20

39 Get Negative

103,20 Save Value in Counter 20

From Firmware 5.172

Action Code	Description	Resp Wizard Category	CCL Code
40	Convert degrees C to F	Miscellaneous	Convert C to F

This action converts a value in degrees Celcius to Fahrenheit

Eg the following response concerts a number in Counter 4 from Celcius to Fahrehheit and announces it on all keypads

81, 04 Get Counter 4

40 Convert C to F

34 Announce number followed by "degrees"

From Firmware 5.172

Action Code	Description	Resp Wizard Category	CCL Code
41	Disable ringer	Misc	Disable ringer

This action disables the ringer for doorbell and reminder. It is used in the Doorbell Response to prevent the phones from ringing but the keypads will chime. It is different from action 26 which stops the doorbell from working

From Firmware 5.172

Action Code	Description	Resp Wizard Category	CCL Code
42	Keypad Family Care	Keypad	Keypad Family Care

This action causes a Family Care Alarm when assigned to a Keypad key. It can be used to make a keypad function key initiate a dialout for Family Care Alarm

From Firmware 5.172

Action Code	Description	Resp Wizard Category	CCL Code
43	Clear Event Log	Security	ClearEventlog

Clears event log

From Firmware 5.172

Action Code	Description	Resp Wizard Category	CCL Code
64	Activate Siren Type	Security	Siren siren_name

Activates one of the siren types if siren is not already on. Each siren type has its own characteristics of frequency, duration, alternating tone, level etc. for the speaker, and determines if the external siren is also activated. If siren is already on, this action has no effect. In order to unconditionally activate a siren type, do Siren Off (action 7) first.

Action Code : 64

Parameter: Siren type (1 to 20)

Example:

64,05 activates Siren Type 5

Action Code	Description	Resp Wizard Category	CCL Code
65	Bell on/off	Output	Bell On off

Switches the Bell output (12V) on or off. The 2nd action code is 1 for on, 0 for off. The Siren Reverse Option determines whether 12V is applied to turn on the bell output or whether 12V is removed to turn on the output (for self-actuated sirens).

Action Code: 65

Parameter: 1 = on, 0 = off

Example:

65,01 turns on the 12V Bell (external siren).

Action Code	Description	Resp Wizard Category	CCL Code
66	Strobe on/off	Output	Strobel On off

Turns on or off the Strobe (12V) output. The 2nd action code is 1 for on, 0 for off.

Action Code: 66
 Parameter: 1 = on, 0 = off
 Example:
 66,01 turns on the strobe.
 66,00 turns off the strobe

Action Code	Description	Resp Wizard Category	CCL Code
67	Skip to Marker if Input= value	If	(Conditional programming)

Skips all actions until the Marker action (192) or Exit (193) is encountered , if the input value (return value from the previous action) is equal to the specified value. This provides the ability to activate different code sequences depending on an input value (conditional branching).

Action Code : 67
 Parameter: value to be compared

Example:
 73,00 Get Security Mode (0=Security off, 1 = Away, 2= Night, 3= Day, 4= Vacation)
 67,02 skip to marker if Night Mode
 (actions)actions executed if not Night Mode (ie Security off, Day, Away or Vacation Mode)
 192 Marker

Action Code	Description	Resp Wizard Category	CCL Code
68	Skip to Marker if Inputnot equal to (<>) value	If	(Conditional programming)

Skips all actions until the Marker action (192) or Exit (193) is encountered , if the input value (return value from the previous action) is not equal to the specified value. This provides the ability to activate different code sequences depending on an input value (conditional branching).

Action Code : 68
 Parameter: value to be compared

Example:
 73,00 Get Security Mode (0=Security off, 1 = Away, 2= Night, 3= Day, 4= Vacation)
 68,02 skip to marker if not Night Mode
 (actions) actions executed if Night Mode
 192 Marker

Action Code	Description	Resp Wizard Category	CCL Code
68	Skip to Marker if Input >= value	If	(Conditional programming)

Skips all actions until the Marker action (192) or Exit (193) is encountered , if the input value (return value from the previous action) is greater than or equal to the specified value. This provides the ability to activate different code sequences depending on an input value (conditional branching).

Action Code: 69
 Parameter: value to be compared

Example:

73,00 Get Security Mode (0=Security off, 1=Away, 2= Night, 3=Day, 4=Vacation)
69,02 skip to marker if >= Night Mode
(actions) actions executed if Security off or Away Mode
192 Marker

Note: EXIT also acts as a marker. It clears skip conditions

Action Code	Description	Resp Wizard Category	CCL Code
70	Skip to Marker if Input < value	If	(Conditional programming)

Skips all actions until the Marker action (192) or Exit (193) is encountered , if the input value (return value from the previous action) is less than the specified value. This provides the ability to activate different code sequences depending on an input value (conditional branching).

Action Code: 70

Parameter: value to be compared

Example:

73,00 Get Security Mode (0=Security off, 1 = Away, 2= Night, 3= Day , 4= Vacation)

70,02 skip to marker if < Night Mode

(actions) actions executed if Night , ie Do if greater than 2 = Day or Vacation Mode

192 Marker (less than 02 = Security off or Away Modes)

Note: EXIT also acts as a marker. It clears skip conditions.

Action Code	Description	Resp Wizard Category	CCL Code
71	Autoarm to mode	Security	AutoArm SecurityOff AwayMode NightMode DayMode Vacation- Mode

Autoarm to Security Mode (0 = Security off, 1 = Away, 2 = Night, 3 = Day, 4 = Vacation)

If arming to Away, Day, Night or Vacation and zones are not closed, the system will force arm if the Force arm option is set to ON. If Force arm option is turned off, the system will not arm. When auto-arming to Away, Night or Day mode, Exit is not required, just like in Remote arming.

Action Code : 71

Parameter: mode (0 = Security off, 1 = Away, 2 = Night, 3 = Day)

Example:

71,00 Disarms to Security off Mode

71,01 Automatically arms to Away Mode

71,02 Automatically arms to Night Mode

71,03 Automatically arms to Day Mode

71,04 Automatically arms to Vacation Mode

Action Code	Description	Resp Wizard Category	CCL Code
72	Keyarm to mode	Security	KeyArm SecurityOff AwayMode NightMode DayMode Vacation- Mode

Arm to Security Mode (0 = Security off, 1 = Away, 2 = Night, 3 = Day, 4 = Vacation).

Action Code : 72

Parameter: mode (0 = Security off, 1 = Away, 2 = Night, 3 = Day, 4 = Vacation)

This action initiates a local arm sequence.

There are 3 Away arming methods, determined by Location 1692

Location 1692	Arming Method	Description
0	Final Door Arm	Arm and terminate Exit delay when Entry Door (Zone Type 2) is closed
1	Exit Delay Arm	Arm after Exit Delay if all zones closed.
2	Exit Terminator	Arm if Exit Terminator button is pressed and all zones closed (UK only)

When arming to Night and Day Modes, final exit circuit is not required to change state. This is the same as arming locally from the Voice menu. This action is used for keyswitch arming. This is different from the Autoarm action (Action 71)

Example:

72,00 Disarms (this does the same thing as 71,00)

72,01 Initiates Security Check for Away Arming

72,02 Initiates Night Mode Arm

72,03 Initiates Day Mode Arm

72,04 Initiates Security Check for Vacation Mode

Action Code	Description	Resp Wizard Category	CCL Code
73	Get Parameter Value	If, or GET Value	(Conditional Programming)

Return value of specified Parameter

Action Code : 73

Parameter number according to the table below

Par	Description	Par.	Description
00	Security Mode (0 = Security off, 1=Away, 2=Night, 3=Day, 4 = Vacation,	17	Current Siren Type (0 to 20)
01	Seconds (00-59) field in the Time of Day	18	Door Station ID (49=DS 1, 50= DS 2)
02	Minutes (00-59) field in Time of Day	19	Holiday (V4.21). Returns 1 if the current day is a Holiday
03	Hours (00-23) in Time of Day	20	Last zone on or off (v4.22). Applies to active zones only ie must be immediate, alert or perimeter in a security mode.
04	Day of month (01-31)	21	Active Alarm Type 0-31 (v4.23)
05	Month (01-12)	22	Dialing Out? (v4.23). Returns 1 if a dialout is in progress
06	Year (00-99)	23	Night Time Flag. This flag is set at Sunset and cleared at sunrise. If time is changed, the flag is determined on the minute.

Par	Description	Par.	Description
00	Security Mode (0 = Security off, 1=Away, 2=Night, 3=Day, 4 = Vacation,	17	Current Siren Type (0 to 20)
07	Century (00-99)	24	User No 1 to 16, 240=KP, 241 = Resp, 244 = CMS, 245 = SMS (6.011)
08	Day of Week (01-07)	25	Away or Vacation Mode or arming to Away/Vacation returns a nonzero value (v4.47)
09	Alarm State (0=idle, 1=trouble, 2=alert, 3=alarm)	26	Phone Offhook. Returns 1 if phone is offhook, 0 if onhook. From V4.85
10	Arming (1 if system is arming, 0 if not)	27	Last Input Zone (active or inactive). Used only in Zone Response to check which zone was activated or restored (V4.126)
11	Not Used	28	Reserved
12	Entry Alert (On=1, Off=0).Returns 1 if Entry Alert, i.e. Entry Door opened when armed.	29	Reserved
13	Engineer Reset Required?	30	Get Last Security Mode. When system is disarmed, the last security mode to which the system was armed can be obtained can be obtained. From firmware 7.036
14	Remote Access=1, Local Access=0. Returns 1 if system is being remotely accessed, and 0 at other times.	31	Get GSM Network strength 0 to 4.Gives GSM network strength if UCM/GSM is installed. From Firmware 7.036
15	Strobe (On=1, Off=0)	32	
16	Keypad ID (65=KP 1, 66=KP 2, 67=KP 3, etc).	33	

The value returned is used to for conditional branching programming

Example:

73,08 Get Day of Week

67,03 Skip to Marker if = 03 (Wednesday)

(actions to be executed if not Wednesday)

193 Exit (if not Wednesday)

(actions to be executed if Wednesday)

ULT 6.011 - 73,24 User Numbers changed from 90, 91, 94, 95 to 240, 241, 244, 245

Action Code	Description	Resp Wizard Category	CCL Code
74	Do Response	Do	Do Response_name

Do Response number. After completion of the called Response, the system will return to continue the Response

Action Code: 74

Parameter: Response Number

Example:

74,03,128,1,1 Do Response 03, then Output 1 ON.

If the target Response is exited via an EXIT action, then the target Response will terminate and return to the main Response. A Skip action set in a target response will not be carried over to the Main response. In previous versions, the skip action set in a target response will skip subsequent actions in the main response.

Be careful of Nested Responses, where the sub-response calls another Response which calls the original Response. This will lead to an endless loop which will cause the system to malfunction, or in computer terms to "crash".

Action Code	Description	Resp Wizard Category	CCL Code
75	Bypass Zone	Security	Bypass Zone_name

Bypass Zone 1 to 64.

Action Code: 75

Parameter: zone number 1 to 64

This action causes the specified zone to be bypassed. Bypassed zones do not activate their alarm types, until they are either unbypassed (by action 10 or 76). Bypassing and Unbypassing of zones is automatically reported in the Event Log, whether the action was done in the Bypass menu (User 3,5), by a User Response, or by Force-arming. When the system is disarmed, all bypassed zones are automatically unbypassed. Action 108 (Omit zone) is similar to Bypass Zone except that the zone is not automatically unbypassed when the system is disarmed. 24 Hour zone types can be Omitted but not Bypassed.

If an LED is required to show the status of this bypass, allocate an output to drive the LED (say OP9) and add the code as follows: 128,9,1.

Example:

75,14, Bypass Zone 14

128,9,1 Switch OP9 ON as indication of a bypassed zone/s.

Action Code	Description	Resp Wizard Category	CCL Code
76	Unbypass Zone	Security	Unbypass Zone_name

Unbypass Zone 1 to 64

This action causes the specified zone to be unbypassed.

Action Code: 76

Parameter: zone number 1 to 64

Example:

76,16, Unbypass Zone 16

Bypassing and Unbypassing of zones is automatically reported in the Event Log, whether the action was done in the Bypass menu (User 3,5), by a Response, or by Force-arming.

When a zone is unbypassed and is in an active state for the security mode, it will cause an alarm. For example, unbypassing an open window in Night or Away mode will cause an alarm.

Action Code	Description	Resp Wizard Category	CCL Code
77	Get Output State	If, Get Value	(Conditional Programming)

Returns the Output status, ie ON or OFF

Action Code: 77

Parameter: Output Number 1-64

Return Value: >0 for ON, 0 for OFF

This action can also be used on RIO/SCS outputs which start from 129

Example:

77, 05 Returns a nonzero value if Output 5 is ON and 0 if Output 5 is OFF. If a pulse was sent to the output, the output would report as OFF after the pulse.

Action Code	Description	Resp Wizard Category	CCL Code
78	Toggle Output	Output	Toggle Output_name

Toggles the state of the output, ie OFF becomes ON and ON becomes OFF

Action Code: 78

Parameter: Output Number 1-64

This action can also be used on RIO/SCS outputs which start from 129

Example:

78, 06 will change the state of Output 6. If it was ON, this action turns it off and vice versa.

Example

79,5,13,78,5 This toggles output 5 only if Input 5 is OFF

79,5,12,78,5 This toggles output 5 only if Input 5 is ON

The above example applies to a two way switch with current sensor and relay using TWS01

Action Code	Description	Resp Wizard Category	CCL Code
79	Get Input State	If, Get Value	(Conditional Programming)

Return state of zone or input.

Action Code: 79

Parameter: zone number 1 to 64

Return Value 0 = zone OFF, 1 = zone ON, 2. = Short Circuit, 3 = Open Circuit. The definition of the On or Off states depend on the zone's Normally Open/Closed setting. A Normally Closed zone is OFF when closed and ON when open, while a Normally Open zone is ON when closed, and OFF when open. Short circuit and Open Circuit values can only be obtained if two end of line resistors are used.

This action can also be used on RIO/SCS inputs which start from 129

Example:

79, 01 returns 1 if zone 1 is ON and 0 if zone 1 is OFF, 2 if S/C, 3 if O/C.

Action Code	Description	Resp Wizard Category	CCL Code
81	Get Counter Value	If, Get Value	(Conditional Programming)

Action Code: 81

Parameter: Counter #

128 general purpose 8 bit counters numbered 0 to 127 are available for user programming. Actions which apply to the counters are Get Counter (81), Increment Counter (83), Decrement Counter (84), and Load Counter (131). These actions return the counter value for further processing, e.g... using the Skip actions. The maximum value which can be in a counter is 255.

e.g...

81, 02 Get value of Counter 2

70, 100 Skip to Marker if value < 100

Action Code	Description	Resp Wizard Category	CCL Code
82	Do Battery Test	Test	Test Battery for n Minutes

82: Battery Test

Parameter: minutes for test

Start a Battery Test for the specified number of minutes. The AC supply will be turned off for the duration of the test. If the time parameter is zero, the test is continues indefinitely. If a low battery condition is detected, the ac supply will be reconnected and a Low Battery alarm is generated. This is normally done in a Time Program.

Example:

82, 05 Starts a 5 minute battery test

82,00 Starts an indefinite battery test (until low battery is detected)

Action Code	Description	Resp Wizard Category	CCL Code
83	Increment Counter	Counter	Increment Counter_name

Action Code: 83

Parameter: Counter # to increment

128 general purpose 8 bit counters numbered 0 to 127 are available for user programming. Actions which apply to the counters are Get Counter (81), Increment Counter (83), Decrement Counter (84), and Load Counter (131). These actions return the counter value for further processing, e.g... using the Skip actions. The maximum value which can be in a counter is 255.

e.g...

131,02,67 Initialize Counter 2 with 67 (Load Values are limited to 254 max. as 255 is the Terminator)

83, 02 Increment Counter 2

70, 100 Skip to marker if value is less than 100

Action Code	Description	Resp Wizard Category	CCL Code
84	Decrement Counter	Counter	Decrement Counter_name

Action Code: 83

Parameter: Counter # to decrement

8 general purpose 8 bit counters numbered 0 to 7 are available for user programming. Actions which apply to the counters are Get Counter (81), Increment Counter (83), Decrement Counter (84), and Load Counter (131). These actions return the counter value for further processing, e.g... using the Skip actions. The maximum value which can be in a counter is 255.

e.g...

131,02,67 Load Counter 2 with 67 (Values limited to 254 max. as 255 is a Terminator.)

...

84, 02 Decrement Counter 2

70, 100 Skip to marker if value is less than 100

Action Code	Description	Resp Wizard Category	CCL Code
85	Stop Timer	Do	Stop Timer_name

Stop Timer 1 to 8.

Action Code: 85

Parameter: Timer 1 to max

Example:

85,5 Stop Timer 5

Action Code	Description	Resp Wizard Category	CCL Code
86	Get Timer value	If	(Conditional programming)

Check if Timer is running. Return 1 if timer is running, and 0 if timer has ended or is not running

Action Code: 86

Parameter: Timer 1 to max

Example

86,7 Check Timer 7

13 Exit if Not Zero, ie exit if still running

.. Timer has stopped, continue

Action Code	Description	Resp Wizard Category	CCL Code
88	Do Alarm Type, report User	Security	AlarmUser alarm_name

Do Alarm Type 1 to 31, and report related user number

Action Code: 88

Parameter: Alarm Type 1-31

Example:

88, 01 Do Intruder Alarm

This action causes the alarm to report the user instead of the zone for pager, event log, and CMS. Action 102 is similar, but reports the zone instead.

Action Code	Description	Resp Wizard Category	CCL Code
89	Read Analog Input	If, Get value	(Conditional programming)

Action Code: 89

Parameter: Analog Input (1 to 64)

Reads the analog value of Inputs 1 to 8. Each of the 8 inputs on the main board and SEM (Slave Expansion Module) have an analog value in the range 0 to 255 (8 bits). The full scale value of 256 is equivalent to 5 Volts. Hence the resolution of the input reading is $5/256 = 19.5$ mv. This can be used to monitor analog inputs in the range 0 to 4.99 Volts. The LEM (Local Expansion Module) Inputs do not have analog values. Inputs meant for reading analog values should be set to Zone Type 0. If they are set to other zone types, Zone Trouble alarms maybe caused by high or low analog voltages

Example:

89,05 Read Analog Input 5.

69,128 Skip if ≥ 2.5 Volts until marker

... Actions performed if < 2.5 V

..

192 Marker

.. Actions continue unconditionally

Action Code	Description	Resp Wizard Category	CCL Code
90	Switched Aux Output (S12V) On/Off	Output	Aux On Off

Action Code: 90

Parameter: 0=off, 1=On

Switches the S12V outputs On or Off in Comfort and on all Slaves. This can be used to reset latched smoke detectors connected to the SWAUX output.

90,01 SWAUX ON
90,00 SWAUX OFF

Action Code	Description	Resp Wizard Category	CCL Code
91	Keypad Menu shortcut	Keypad	Keypad Menu menu_name

Action Code: 91

Parameter: Menu Number 1-max

When assigned to a Keypad Response, causes the Keypad to execute the specified menu.

Menu No	Description	Menu No	Description
1	Arm Security Menu	20	Change Responses
2	Messages menu	21	Control Settings
3	Security menu	22	Mode Responses
4	Home Control Menu	23	Emergency Menu
5	Reminder Menu	24	Change Sign In Code
6	Event log	25	Baby Monitor (see action 93)
7	Test	26	Record Alarm message
8	Bypass	27	Record Memo
9	Answering Machine Settings	28	Assign Phone to Mailbox
10	Change Date	29	Change Entry Exit Time
11	Change Phone	30	Reserved
12	Program Mode Security Opt	31	User Menu
13	Reserved	32	Mailbox Options
14	Pager Id	33	Call Screening
15	Engineer Code Enable	34	Alarm Type Dial On/Off
16	No of Rings	35	Record Message Menu
17	Time Program	36	User Codes Menu (V4.46)
18	Vacation Program	37	Keypad Announce enable menu
19	Change Holidays	38	Home Control Menu Group 0 (V4.140)

e.g...

Response 102: 91,4,255 (Go to Home Control menu)

If Response 102 is assigned to one of the Keypad buttons, the Home control menu will be activated when the Function (F) key and the assigned key are pressed.

This action has no effect when not assigned to a Keypad function key.

Action 134 also gives a short cut to a menu but allows the next selection to be made on the menu.

Action Code	Description	Resp Wizard Category	CCL Code
92	Engineer Sign in Enable/disable	Security	Engineer Enable Disable

Action Code: 92

Parameter: Engineer Code enable On=1, Off=0

e.g...

92,1 Enable Engineer Code

92,0 Disable Engineer Code

This action is used by the default F0 keypad function key to enable Engineer Code

Action Code	Description	Resp Wizard Category	CCL Code
93	Baby Monitor Keypad	Keypad	Baby Keypad n

Assign Keypad as baby monitor.

Action Code: 93

Parameter: Keypad 1 to 8

When assigned to a Keypad Response, this causes the Keypad to turn on the microphone of the selected Keypad number. The Keypad where the function is selected will have its speaker turned on.

E.g. Response = 93,2,91,25 assigned to one of the Keypad function keys sets keypad 2 as the monitored keypad (93,2) and activates Baby Monitor Mode (91,25).

Action Code	Description	Resp Wizard Category	CCL Code
94	Assign Keypad to Zone for Voice Station	Keypad	Voice Keypad n

Links zone to Keypad for Keypad Voice Station monitoring.

Action Code: 94

Parameter: Keypad 1 to 8

When assigned to a Zone Response, it will automatically select the Keypad during Voice Station monitoring. This enables a Voice Station to automatically change to the nearest Keypad when zones are triggered during an alarm.

Action Code	Description	Resp Wizard Category	CCL Code
95	Call Screening on/off	Keypad	CallScreening On Off

Turn on or off the Call Screening feature, ie, play incoming calls on the Keypad speakers during recording.

Action Code: 95

Parameter: 0=off, 1=on

Use this to allow a switch to control the call screening feature

Action Code	Description	Resp Wizard Category	CCL Code
96	Set Message Tag for Recording	Keypad	MessageTag Greeting Alarm Mailbox n Reminder n MailboxName n

Selects a message tag for recording a message from the Keypad. This action does not initiate the recording, it just specifies what type of message to record. The recording is done using Actions 134,35,1 (record message) assigned to a Keypad function key.

Action Code: 96

Parameter: tag, where tag is one of the following:

Mailbox: 160 + (Mailbox-1) e.g..., 96,167 means a message into mailbox 8
 Greeting Message: 0 e.g...: 96,0 records the greeting message
 Alarm Voice Message: 64 e.g...: 96,64 means the Alarm Voice Message
 Reminder: 48 + (Reminder No-1) e.g...: 96,48 means Reminder message 1
 Mailbox Name: 16 + (Mailbox-1) e.g...: 96,16 means Mailbox 1 name
 e.g... 96,160,134,35,1 records a message into Mailbox 1 when programmed in a Keypad function key Response. Action 134,35,1 is the recording menu on the Keypad.
 From Firmware 4.23

Action Code	Description	Resp Wizard Category	CCL Code
97	Activate Reminder message	Keypad	Reminder <i>n</i>

Immediately activates a Reminder Message 1 to 8. This can be used for event triggering of Reminders, e.g... using a switch or sensor. The reminder message is either transferred into a mailbox, or gives an alert tone on the Keypad. This is different from Action 133, which announces the Reminder message on the selected Keypad

Action Code: 97

Parameter: Reminder no 1 to 8

From Firmware 4.11

Action Code	Description	Resp Wizard Category	CCL Code
98	Daylight Savings Time Adjust	Control	DSTAdjust +1 -1

NO LONGER USED with Comfort II Firmware 5.121 with Sunset/Sunrise times and Automatic Daylight Savings adjustments Removed 5.224

This action code can be used to alter Comfort's system clock automatically for use in countries that use Daylight Savings Time. A Comfort Response may be programmed to suit your particular requirements. To do this, a Time programs and a response are needed.

Action Code: 98

Parameter: +1 hr =1, -1 hr = 2

Action Code	Description	Resp Wizard Category	CCL Code
99	Set Authorisation for Keypad	Keypad	Authorise option+option+option where option = LocalDisarm LocalArm RemoteDisarm RemoteArm AlarmDisarm SecurityMenu HomeControl Program

Action Code: 99

Parameter: Authorization Value (the combination of the values in the table below)

Each of the 16 User Codes can be individually programmed for authorization for Local Arm, Local Disarm, Remote Arm, Remote Disarm, Disarm after Alarm, Home Control Menu Access, Security Menu Access, and Programming Menu Access. The Locations for these settings are described in Worksheet Table 38.

Local Disarm	Local Arm	Remote Disarm	Remote Arm	Alarm Disarm	Security Menu	Home Control	Program Menu	Value
Add 1	Add 2	Add 4	Add 8	Add 16	Add 32	Add 64	Add 128	

The Keypad Function keys are programmed in the Control Station Menu (Engineer Menu 4,4). When a user code is required to access the Function Key, by default, all valid user codes are allowed to access the programmed function. To allow only User Codes with certain Authorization settings to access the Function Key, Action 99 is used to set the Authorization value which is allowed access. For example, Function 1 by default is the Bypass Menu. To allow only user codes with Security Menu authorization to access this menu, the Response assigned to Control Station Key 1 would be 99,32,91,8.,255

99,32 is set Authorization Code to 32. In the Authorization settings table, 32 is the value for Security Menu authorization. 99,32 means that only user codes with Security Menu authorization are allowed access to the Function Key. The action codes 91,8 assign Menu 8, i.e. Bypass Menu to the Function Key.

If no User Code is required for access to the Function Key, then this action will have no effect.

When accessing the menus by signing in to the Voice Menu, the authorization settings for each code are checked automatically by the system. It is only when accessing the Keypad shortcut Function Keys that this Action is used to select which authorization values are to be allowed access

Action Code	Description	Resp Wizard Category	CCL Code
100	Limit Dialout	Security	Limit Dialout $n+n+i+$ where $n = 1-8$

Action Code: 100

Parameter: Phone setting value (the combination of phone 1 to 8)

The purpose of this Action is to allow dialout to a selected combination of phone settings 1 to 8 for certain Alarm Types. Each Alarm Type can be programmed to dial to any combination of phones 1 to 8. Action 100 provides a way to modify the phones setting in certain circumstances. This can be used to select phones to dialout at certain times (shifts) or to allow dialout only in certain Security Modes. For example, if the Fire Alarm is required to dial to Phones 1,2,3,4 when armed, but only to phones 3 and 4 in Security off, Night or Day Modes, the following Response would be assigned to the Fire Alarm (Type 10):

73,00 (Get Security Mode)
 67,1 (Skip if 1, or Away Mode)
 67,4 (Skip if 4, or Vacation Mode)
 100,12 (Allow dial to phones 3,4)
 255 (Terminator)

The parameter for Action 100 is obtained as follows

	Dial Position							
	8	7	6	5	4	3	2	1
Add value	128	64	32	16	8	4	2	1

For example, To allow dial to phones 3,4,5,6, add values $4+8+16+32=60$. Hence 100, 60 will allow dialout to these phones only.

Actions 100,0 will prevent dial to all 8 phones. Note that this action can only stop dialout to certain phones, it does not cause a dialout to phones which are not originally enabled.

From Firmware 4.17

Action Code	Description	Resp Wizard Category	CCL Code
101	Set Parameter	Keypad	Set Parameter <i>n</i>

Action Code: 101

Parameter: 0 to 254

This action sets the value of parameter for another Menu. This is used by Action 91, 34 (Alarm Type Dial Setting ON/OFF Menu), to select the Alarm Type.

Example:

101, 29, 91, 34 This Response assigned to a Function key brings up the New Message Alarm Type (29) Dial Setting ON/OFF menu to allow users to turn on and off forwarding of New Messages to their phone. 101, 29 sets parameter to 29 (New message alarm). 91,34 goes to Alarm Types Dial setting menu, and sets Alarm Type to 29.

From firmware 4.20

Action Code	Description	Resp Wizard Category	CCL Code
102	Do Alarm Type, report zone	Security	Alarmzone zone_name

Do Alarm Type 1 to 31, report zone number

Action Code: 102

Parameter: Alarm Type 1-31

Example:

102,01 Do Intruder Alarm

This action causes the alarm to report the zone instead of the user number for pager, event log, and CMS. Action 88 is similar, but reports the user instead.

From Firmware 4.21

Action Code	Description	Resp Wizard Category	CCL Code
103	Load counter with last action value	Counter	Set counter_name

Action Code: 103

Parameter: Counter #

Instead of loading a counter with a fixed value (as in Action 131), this action loads a counter with the input value from a previous action. This allows variables obtained from other actions like Action 89 (Read Analog Input) to be saved to a counter to be used later.

Example:

89,04 Read Analog Input 4

103,00 Load Counter 0 with the value (from Analog Input 4)

... Other actions

81,00 Get Counter 0

..

From V4.50

Action Code	Description	Resp Wizard Category	CCL Code
104	Input value - Counter Value	Counter	Subtract counter_name

Action Code: 104

Parameter: Counter # to subtract

This action subtracts the value of the specified counter from the Input value from a previous action

Example:

89,05 Read Analog Input 5

103,02 Load Counter 2 with the value (from Analog Input 5)

89,07 Read Analog Input 7

104,02 Subtract the value in Counter 2

69,128 Skip if ≥ 128 . Effectively, this skips if the result is negative. A negative result of a subtract operation for 8 bit operands is in the range 128 to 255. E.g. $2 - 3 = 255$ (i.e. -1)

Action 104 allows comparison using one or more values from external inputs.

From V4.50

Action Code	Description	Resp Wizard Category	CCL Code
105	AND Input with last action value	Input	AndInput <i>zone_name</i>

This ANDs the result of the incoming result from a previous action with the specified input. This provides either a Zero or Non Zero result, and does not use the analog value of the input.

Action Code: 105

Parameter: Input number 1 to 64

Example

79,15 Read Input 1 state (0=off, 1=ON, 2=S/C, 3 = O/C)

105,16 And value from previous action with Input 16

From V4.77

Action Code	Description	Resp Wizard Category	CCL Code
106	Or Input with last action value	Input	OrInput <i>zone_name</i>

106 - OR Input with Input Value (106, Input 1-64)

This ORs the result of the incoming result from a previous action with the specified input. This provides either a Zero or Non Zero result, and does not use the analog value of the input.

Action Code: 106

Parameter: Input number 1 to 64

Example

79,15 Read Input 1 state (0=off, 1=ON, 2=S/C, 3 = O/C)

106,16 OR value from previous action with Input 16

From V4.77

Action Code	Description	Resp Wizard Category	CCL Code
107	Exclusive OR Input with last action value	Input	XorInput <i>zone_name</i>

This does an Exclusive OR of the result of the incoming result from a previous action with the specified input. This provides either a Zero or Non Zero result, and does not use the analog value of the input. An Exclusive OR actions gives a Zero result if both operands are the same and a 1 result if both are different.

Action Code: 107

Parameter: Input number 1 to 64

Example

79,15 Read Input 1 state (0=off, 1=ON, 2=S/C, 3 = O/C)

107,16 Exclusive OR value from previous action with Input 16

From V4.77

Action Code	Description	Resp Wizard Category	CCL Code
108	Omit Input	Input	Omit <i>zone_name</i>

This action Omits or removes an input from the system. It is similar to Bypass (Action 75) and, except that while Bypassed inputs are unbypassed whenever the system is disarmed to Security Off, Omitted Inputs remain ignored until the input is Unbypassed using Action 76 or via User Menu 3,1. 24 Hour zone types can be Omitted but not Bypassed. Action 10 (Unbypass All Inputs) does not unbypass an Omitted input. If an input is Omitted, the Bypass User Menu will announce the Input as Bypassed. This action is useful e.g... for shunting a group of zones via a keyswitch, so that the shunted zones remain so until they are unbypassed.

Action Code: 108

Parameter: Input Number 1 to 64

Example

108, 23

Omit Input 23. Input 23 is effectively bypassed and will remain so even when the system is disarmed. Unbypassing using actions 76,23 will restore the zone to the system, as will User Menu 3,1 and entering Zone 23# and selecting 0 for Unbypass.

Difference between Force arm, Bypass, and Omit:

When an input (or zone) is auto-bypassed during Force-arm, the input goes back to normal when it is restored and when the system is disarmed. When the input is bypassed, it does not return to normal when the input is restored; it does so when the system is disarmed. When the input is Omitted, it does not return to normal when the system is disarmed

Action Code	Description	Resp Wizard Category	CCL Code
109	Set no of cycles for X10 bright/dim command	X10	X10 dimlevel <i>n</i>

Action Code: 109

Parameter: Number of bright/dim cycles.

X10 Dim/Bright Cycles: This sets the number of cycles for the dim or bright command to operate continuously. For example, 109,12,195,65,2,9,255 will dim A2 by 12 cycles. 109,12 sets the number of cycles as 12, while 195,65,2,9 activates the DIM command. From 4.97

From 4.165, if any X10 bright or dim command is sent, there will be a minimum of 2 bright/dim cycles even if action 109 gives less than 2 cycles. The maximum number of dim/bright cycles is 31 regardless of action 109. From 4.165, Action 109 level is

unchanged by an X10 dim/bright command where previously, after a bright/dim command, the dim/bright level is changed to 0.

Action 109 is not used for Preset Dim

Action Code	Description	Resp Wizard Category	CCL Code
110	Check New Messages in Mailbox	If, Get Value	<i>(Conditional programming)</i>

Action Code: 110

Parameter: User 1 to 8

Returns 0 if there are no new messages in the users mailbox. If there is at least one new message, the value returned will be nonzero, but it does not tell the number of new messages in the mailbox. The value returned is the bit position of the user number, e.g... 01 is user 1, 02 is user 2, 04 is user 3, 16 is user 4 etc. From v4.99.

Action Code	Description	Resp Wizard Category	CCL Code
111	Start Door Station Timer	Keypad	Start DSTimer <i>n</i>

Action Code: 111

Parameter: Time in seconds (1 to 255)

This action is used in the Door Station Response (in Location 1691) to change the default door station time-out. When used in the Doorbell Response, the time-out applies both to the ringer time in Security off/Night mode and to the door station mode dialout in away mode.. When used in the Doorbell alarm (Alarm Type 25), it applies only to the dialout, and not the ringer. The time-out in Away mode will override the timer set in the Doorbell response if the system is in Away Mode.

From V4.131

Action Code	Description	Resp Wizard Category	CCL Code
112	Set Extended Zone Sensitivity count	Security	Set <i>n</i>

Action Code: 112

Parameter: count (1 to 5)

This action extends the sensitivity of a zone by the count parameter 1 to 5. The maximum zone sensitivity is 850 ms. Some industrial equipment may have transient switching of relays which must be ignored but may last longer than 850 ms. This action must be assigned to the ZONE ON Response. If the sensitivity count = 2, the zone sensitivity will be doubled, the zone must be activated for 1700 ms before the alarm is activated. Note that the zone will be reported as ON to the RS485 bus and UCM, and the zone ON response will be activated after the normal sensitivity

E.g.

112, 3

The zone sensitivity is 3 times the programmed sensitivity of the zone type. However the zone activation will be reported 3 times on the RS485 bus and hence on the UCM. The alarm type will only be activated after the zone is activated for the extended sensitivity time.

Parameter 0, ie 112,0 is ignored

From V4.228

Action Code	Description	Resp Wizard Category	CCL Code
113	Branch Unconditional		

Action Code: 113

Parameter: Signed offset -128 to 128

This action skips action bytes according to a signed offset -128 to 127.

E.g.

113, 3 Branch +3 bytes

128,1,1 Output 1 On

128,2,1 Output 2 ON

The action sequence will skip Output 1 ON (128,1,1) and will continue at Output 2 ON

E.g.

128,1,1 Output 1 ON

193 EXIT

113, 250 Branch -6 bytes

128,2,1 Output 2 ON

The action sequence starting at 113,3 will not continue at Output 2 ON (128,2,1), but will branch back 6 bytes to the action Output 1 ON (128,1,1). Negative offsets are determined by the formula (256 - offset), hence -6 is represented by 256-6 = 250. By this formula offset values 128 to 255 are negative while 1 to 127 are positive offsets.

From V4.233

Action Code	Description	Resp Wizard Category	CCL Code
114	Branch if =0		

Action Code: 114

Parameter: Signed offset -128 to 128

This action skips action bytes according to a signed offset -128 to 127 if the return value from the previous action is zero.

E.g.

81,2 Get Counter 2 value

115, 3 Branch +3 bytes if value = 0

128,1,1 Output 1 On

128,2,1 Output 2 ON

If the value of counter 2 The action sequence will skip Output 1 ON (128,1,1) and will continue at Output 2 ON

See the example of Action 113 for branch to negative offset

From V4.233

Action Code	Description	Resp Wizard Category	CCL Code
115	Branch if <>0		

Action Code: 115

Parameter: Signed offset -128 to 128

This action skips action bytes according to a signed offset -128 to 127 if the return value from the previous action is not zero.

E.g.

81,2 Get Counter 2 value

115, 3 Branch +3 bytes if value <> 0

128,1,1 Output 1 On

128,2,1 Output 2 ON

If the value of counter 2 The action sequence will skip Output 1 ON (128,1,1) and will continue at Output 2 ON

See the example of Action 113 for branch to negative offset

From V4.233

Action Code	Description	Resp Wizard Category	CCL Code
116	Get Sensor Register Value	Sensor	Get Sensor Register N

Action Code: 116

Parameter: Sensor Register 0 to 31

Return the value 0 to 255 stored in the specified Sensor Register. Sensor Registers are numbered 0 to 31.

Device ID Sensor Register

KP04 1 to 16 0 to 15

SCS 1 to 8 8 to 15

Sensor Module any 16 to 31

SCS 1 to 8 shall have the same sensor registers as KP ID 9 to 16

There can be max 1 Sensor module in the system. This will probably use a UCM ID

There can be max 1 Smartfit (v2) in the system which uses 1 UCM ID

For UCM sensors, the CM will rely on the UCM Type info from the UCM to know what sensor it is and assign the sensor registers accordingly

There are 32 8-bit Sensor registers to accept and store the sensor values. When Sensor values are received, they activate Sensor Responses just like Counter Responses

E.g.

16,1 Get Sensor 1 value (from KP04 ID 1)

115, 3 Branch +3 bytes if value <> 0

128,1,1 Output 1 On

128,2,1 Output 2 ON

Action Code	Description	Resp Wizard Category	CCL Code
117	Change Entry Delay Time	Security	Change Entry Delay

Action Code: 117

Parameter: Entry Delay 0 to 254

Return Value None

This action changes the Entry Delay time according to the parameter in seconds, when the system is armed. This overrides the default Entry Delay parameter and allows different entry delays for different Entry Doors. This action does NOT start an entry delay, it only changes the entry delay time temporarily. Note that this applies to Entry Door Zone Types only, OR to zones which temporarily become Entry Doors by means of the Start Entry Delay Action (Action #4). This is useful for garage Doors which are used as Entry doors which require a longer entry time.

E.g.

Entry Door Zone Response:

Change Entry Delay 100

Action codes: 117,100

This changes the Entry Delay from the default (30 seconds) to 100 seconds.

Zone Response: 4,117,10

If SecurityMode = NightMode Then

 Change Entry Delay 15

 Start EntryDelay

End If

Action Codes: 4,117,10

This causes a Zone eg a PIR in Night Mode to start an entry delay and change the Entry delay time to 10 seconds.

Applicable from Comfort Firmware 5.205

Action Code	Description	Resp Wizard Category	CCL Code
118	Reset Module	Misc	Reset Module

Action Code: 118

Parameter: ID 10H to 18H, 20H to 23H, 30H to 33H, 40H to 48H, 50H to 5FH

Return Value None

This action resets a module with specified ID. 10H is all UCMs, 20H is all saves, 30H is all door stations, 40H is all keypads, 50H is all SCS.RIO

Eg

118, 46H means Reset ID Keypad #6

118, 20H reset all slaves.

From firmware 5.222

Action Code	Description	Resp Wizard Category	CCL Code
119	Save to Event Log	Misc	Save Event

Action Code: 119

Parameter: Tracking Event 0 to 255

Return Value None

This action saves a custom event in the Event Log.

Eg

119, 1 Save Tracking Event 1 in event Log

This allows the programmer to test that a programmed action has taken place. For example this action can be included in a Time Program. The event log can be checked to determine if the Time Program actually did occur at the programmed time.

From firmware 6.065, Configuraor 3.6

Action Code	Description	Resp Wizard Category	CCL Code
120	Input value - Sensor Value	Counter	Subtract <i>sensorname</i>

Action Code: 120

Parameter: Sensor # to subtract

This action subtracts the value of the specified sensor from the Input value from a previous action

Example:

31 get Last Counter (read value of incoming counter)
 153,02 Load Sensor 2 with the value
 120,04 Subtract the value in Sensor 4
 143,03, 00 Branch to +3 if Value is >= 0
 Defined 24/1/2013

Action Code	Description	Resp Wizard Category	CCL Code
121	Load Sensor No with Last Action Value	SensorS	?

Action Code 21

Parameter 1 sensor No 0 to 31

Load the sensor number with value from the previous action

25/1/13 replaced action 153

Action Code	Description	Resp Wizard Category	CCL Code
128	Output On/Off	Output	Output Output_name On Off Toggle Pulse Flash

Switches Comfort outputs 1 to 64 or SCS/RIO Outputs 129 to 192 on/off, pulse or flash. Switching the output ON applies 12V between the Output terminal (pulled to ground) and the 12V terminals. Note that the outputs are open collectors which pull to ground (negative) when turned on. All outputs will switch OFF following a system power-up or system reset. Relay boards are available in sets of 4 (RLY01) or 8 (RLY02) to provide voltage-free NO/NC contacts.

Action Code: 128

Parameter 1: Output number 1 to 64 for Comfort Outputs, 129 to 192 for SCS/RIO Outputs. If output is 0, the value returned from previous actions is used.

Parameter 2: 0 for Off, 1 for On, 2 for Toggle (Change State), 3 for Pulse Output for 1 second, 4 for Flash output at 1 second on/off rate.

Parameters 2,3,4 are applicable from Outside 4.148

Example 1:

128,11,01 turns on output 11

Example 2:

81,4 Get Counter 4 value

128,0,1 Turn on output number returned from previous actions i.e. the value of counter 4.

Example 3: Zone Response

73,27 Get last zone (from V4.126)

128,0,1 Turn on output number corresponding to zone activated

Example 4:

128,15,2 Change State of Output 15

128,37,3 Pulse Output 37 for 1 second

128, 63,4 Flash output 63 at 1 second on, 1 second off rate

Action Code	Description	Resp Wizard Category	CCL Code
129	IR Code to Output	Output	IR Code IrCode_name To Output_name

Send Infrared Code (1 to 25) to output (0 to 64 or SCS/RIO Output 129 to 192)

Action Code: 129

Parameter 1: Infrared Code number 1 to 250

Parameter 2: Output number through which the IR. signal is sent. If Output=0, the output number will be taken from the last return value

Example 1:

129,05,08 sends IR. code 5 to Output 8.

Example 2:

73,27 Get last zone (from 4.126)

129,3,0 send IR code 3 to output number returned from last action (ie zone number)

Infrared, Pulsed output, and X10 actions may require several seconds to complete.

These output control actions, including Action 128 are placed in a 16-event queue for sequential execution and cannot take place concurrently

Action Code	Description	Resp Wizard Category	CCL Code
130	Pulse Output	Output	Pulse Output_name For n (n50 ms units)

Activates a pulse of specified pulse width on any Output 1 to 64 or SCS/RIO Output 129 to 192. This action is used to activate automatic curtains, drapes door entry controllers, gates or garage doors which require a pulse instead of a latched output.

Action Code: 130

Parameter 1: Pulse width in 50 ms units (1 to 255)

Parameter 2: Output number 0 to 64. If Output=0, the output number will be taken from the last return value

Example 1:

130,20,04 Pulse 1 second (50 ms x 20) to output 4

Example 2: Zone Response

73,27 Get last zone (from V4.126)

130,20,0 1 second pulse on output number corresponding to zone activated

Infrared, Pulsed output, and X10 actions may require several seconds to complete Note that output actions 128, 129, 130, and X10 actions are queued up in the order that they are activated, and cannot take place concurrently. There are 16 Output or X10 events in the queue. If a Pulse output action is followed by an Output ON/Off action, the Pulse action will complete before the Output action is executed. Hence a 4 second pulse will delay the following output or X10 action by 4 seconds. The Comfort controller and Slaves (SEM) will each have their own 16-event output/ queues. Avoid the possibility of overflowing the queue, by using timers to delay output and X10 actions. For example for a string of commands, Output 1 ON to Output 10 On, split up the commands into 5 output actions followed by a timer delay of a few seconds which calls the next 5 output actions. The delay allows the output queue to clear before the second set of output actions is executed.

E.g.

Response 1:

Output 1 ON, Output 2 ON, Output 3 ON, Output 4 ON, Output 5 ON, Do Response 2 after Timer 1 expires.

Response 2:

Output 6 ON, Output 7 ON, Output 8 ON, Output 9 ON, Output 10 ON.

Action Code	Description	Resp Wizard Category	CCL Code
131	Load Counter	Counter	Set Counter_name = value

Action Code: 131

Parameter 1: counter 0 to 63 (0-7 for Comfort Entry)

Parameter 2: Value

64 general purpose 8 bit counters numbered 0 to 63 are available for user programming (Comfort Entry has only 8 counters). Actions which apply to the counters are Get Counter (81), Increment Counter (83), Decrement Counter (84), and Load Counter (131). These actions return the counter value for further processing, e.g... using the Skip actions.

e.g...

131,02,67 Initialize Counter 2 with 67 (Load Values are limited to 254 max. as 255 is the Terminator.)

...

83, 02 Increment Counter 2

68, 98 Skip to marker if value is not equal than 98

Action Code	Description	Resp Wizard Category	CCL Code
132	User Flags action	Control	Clear Set Toggle Flag Flag_name (For check, See Conditional Programming)

Action: 132

Parameter 1: Flag No 1 to 64 (1 to 16 for Comfort Entry)

Parameter 2: clear=0, set=1, check=2, toggle=3

64 user flags are available for general purpose programming.

e.g...

132,14,01 Set User Flag 14 (NO RETURN VALUE)

132,05,00 Clear User Flag 5 (NO RETURN VALUE)

132,06,02 Check User Flag 6, return 0 if flag is not set, nonzero if flag is set

132,04,03 Toggle User Flag 4,return 0 if flag cleared, nonzero if flag is set by action (bug in firmware < 5.154 Toggle returns incorrect value)

The Check Flag action return a value of either >0 or =0

Action Code	Description	Resp Wizard Category	CCL Code
133	Reminder Message on Keypad/Door Station	Keypad	Reminder n On Keypad n

This action causes the specified Reminder message to be announced on the specified Keypad or Door Station. This can be used to announce a warning message from the owner when a zone is triggered. This can also play a message on the Door Station to tell the visitor to wait when the doorbell has been pressed by assigning a Response in Location 1691 (Doorbell Response)

Action: 133

Parameter 1: Reminder 1 to 16

Parameter 2: 1 to 8 (or 65 to 72) for keypads 1 to 8, 49 to 51 for Door Stations 1 to 3, 17 to 24 is the ID for UCMs. 0 is the Broadcast id for all modules, 16 is the

broadcast ID for all UCMs, 64 is the broadcast id for all keypads. 48 is the broadcast id for all Door Stations. Broadcast Ids are applicable for Action 133 from Firmware 4.120
Reminder message on Door Stations from V4.101

Action Code	Description	Resp Wizard Category	CCL Code
134	Shortcut to Keypad menu and Selection	Keypad	Keypad Menu Menu_name Selection key

This action is similar to Action 91 (go to Keypad Menu), except this action allows a submenu to be selected from the specified Menu. This is used for assigning shortcuts to menus for Keypad buttons (F followed by button)

Action: 134

Parameter 1: Menu Number (see Action 91 list)

Parameter 2: Selection 0 to # key to be applied to the specified menu

Example 1. A Keypad function key can be programmed to record a message for Mailbox 3 using the actions 134,27,3. The number after the action code 134 is for Menu 27, the Record Memo menu. 3 selects Mailbox 3 from the Record Memo menu. Action 91,27 would go to the Record Memo Menu which asks for selection of mailbox number.

Example 2: A Keypad function key can be programmed for the Security Check Menu using Actions 134,7,2. Menu 7 is Test Menu, and 2 selects Security Check from the Test Menu.

From Firmware 4.23

Example 3: Program a Keypad function key to control an appliance on Control Key 6 from the Home Control Menu using actions 134,4,6. 4 is the Home Control Menu and 6 is the Control key selected.

Action Code	Description	Resp Wizard Category	CCL Code
135	Record Message on Door Station	Keypad	Record Mailbox n After n Seconds

This action allows the Door Station to take a message from the visitor if the user does not answer after a specified time. The message can be programmed to go to any mailbox. If there is no answer after the programmed elapsed time, the Greeting Message if any, is played and a message will be recorded from the Door Station microphone. If Door Station recording is required in all security modes, use this action in Doorbell Response at Location 1691. If the Door Station recording is required only if the remote phone does not answer in Away mode, use the action in the Doorbell Alarm Type 25 Response. Door Station recording can also be activated instead of DoorStation dial out.

Action: 135

Parameter 1: Mailbox 1 to 8

Parameter 2: Elapsed Time in seconds before Door Station recording

Example

135,2,30 will turn on Door Station recording to mailbox 2 after 30 seconds if there is no answer.

From Firmware 4.23

Action Code	Description	Resp Wizard Category	CCL Code
136	Set Virtual Output	Output	VirtualOutput VirtualOutput_name value (value = 0-254 or On Off)

Action : 136
 Parameter 1: output number 0 to 254
 Parameter 2: output value 0 to 254

Virtual outputs do not trigger any of Comforti's physical outputs. They cause an OV message to be sent on the UCM RS232 channel. Any output from 0 to 254 can be selected, and the value of the output can be from 0 to 254. This has no predefined meaning, but are interpreted by the RS232 receiving device according to the application. They may be used to transmit analog values to virtual ports, and may be used to set temperature setpoints or light level thresholds, just to name a few uses. From Outside 4.7

Action Code	Description	Resp Wizard Category	CCL Code
138	UCM Dialout	Output	UCM n Hangup Dialout Dial When Free

Action: 138
 Parameter 1: Off=0, On=1, when free=2
 Parameter 2: id

This action causes the addressed UCM id to issue a DI message to its RS232 interface, for the purpose of telling the connected device to dial up or disconnect for the purpose of establishing a dial-up connection on the modem. Implementation of the DI function depends on the software running on the PC or connected device.

8 Oct 2010 This action may not be supported in future as it is no longer useful

Example:

138,1,17 send DI01 (dial up to UCM id 1)
 138,0,19 send DI00 (hang up to UCM id 3)
 138,2,21 send DI01 to UCM id=5 when the telephone line is free. This waits for the telephone line to be free (not used) before sending the DI dialout command to the addressed id

From Outside 4.110.

Action Code	Description	Resp Wizard Category	CCL Code
139	Keypad Announcements On/Off	Keypad	Keypad n Broadcast Enable Disable

Action 1: 139
 Parameter 1: id (65=KP 1, 66 = KP2, ..., 71 = KP 8)
 Parameter 2: On/off

This action determines whether the keypad id responds to broadcast announcements, e.g.. announcement of security modes (Away Mode, Security Off), zone announcements using action 1, Reminder programs, Alarm sounds, Door Station chime, keypad intercoms using F8 etc. When announcements are turned off for a keypad, it can still be addressed specifically, e.g.. Action 133 to play reminder messages on the keypad, F+8 + keypad number to select a specific keypad for intercom. The keypad voice menu can be heard when you sign in on the keypad.

Example:

139,68,0 turns off announcements on keypad 4

This action can be used in Time programs to turn on and off announcements on any keypad. From Firmware 4.117

Action Code	Description	Resp Wizard Category	CCL Code
140	X10 Extended Command	X10	X10 Extended <i>data command</i>

Action 1: 140

Parameter 1: X10 Extended Data

Parameter 2: X10 Extended Command

This action sets the data and command for X10 Extended codes, but does not initiate the transmission of X10 extended codes.. Refer to X10 document XTC798 from the x10 web site for details of the extended command format. Action 140 must be used in conjunction with Action 195. Action 195 must have one of the 3 extended code functions as the function code. Extended Code 1 for Data/Control is used for Extended Preset Dim. The other Extended Codes (Meter Reading and Security) are not used by any standard X10 modules at present.

The data and command codes set by Action 140 will remain until another action 140 overrides the values.

Parameter 2 (X10 Extended Command) has been defined for a number of functions, but most are not in use for standard X10 modules. Command 49 has been defined as Preset Dim which is used by the LD11 X10 Lamp modules.

Parameter 1 (X10 Extended Data) depends on the extended command. For the Command 49 corresponding to Preset Dim, the extended data is the brightness level in the range 0 to 63. A level of 0 corresponds to full dim, or OFF, A level of 63 corresponds to full brightness. When the extended preset dim command is sent with a value of 1 to 62, the light will turn on at the previous level and gradually ramp to the new level.

E.g.

140, 32, 49 sets data to 32 and command to 49 (Dimming command). This will cause the module to dim to level 32 (out of a maximum of 63).

195,65,1,15 sends extended code to module A1. 15 is the extended code for Data/Control which includes Dimming

With this protocol, any extended command can be sent to any X10 module. To send extended x10 codes the function code must be one of the 3 extended codes 15 (for Data/control), 21 for Security messages, and 25 for Meter Reading. The extended codes for Security Messages and Meter Reading have not been defined yet.

From Outside 4.135. Not applicable to Entry

Action Code	Description	Resp Wizard Category	CCL Code
141	Do Response (for Ultra)	Do	Do Response_name

Do Response number, where Response number is 0 to 1023 (for Comfort Ultra). After completion of the called Response, the system will return to continue the executing actions following 141. Action 141 is the same as Action 74 except that it requires 2 numbers to represent the range of Responses from 1 to 1023.

Action Code: 141

Parameter 1: R_L = Response Number (Low Byte)

Parameter 2: R_H = Response Number (High Byte)

Response number = $R_H \times 256 + R_L$

Example:

74,03, 01,128,1,1 Do Response 259, then Output 1 ON.

In the response example, 03,01 represents the called Response. 03 is the low byte of the response and 01 is the high byte. Multiply the high byte by 256 and add it to the low byte to get the Response number. It is best to use the Configurator software to

Do Responses as it will automatically calculate the Response parameters needed for this action.

Action 74 can also be used in Comfort Ultra to call a Response number which is less than 255.

E.g. 74,190 will also call Response 190 in Ultra.

However, Action 141 will not work in Comfort PRO and ENTRY.

Avoid 255 in the Response high byte and low byte as this will terminate the Response entry.

As in Action, 74, if the target Response is exited via an EXIT action, then the target Response will terminate and return to the main Response. A Skip action set in a target response will not be carried over to the Main response. In previous versions, the skip action set in a target response will skip subsequent actions in the main response.

Be careful of Nested Responses, where the sub-response calls another Response which calls the original Response. This will lead to an endless loop which will cause the system to malfunction, or in computer terms to "crash".

Action Code	Description	Resp Wizard Category	CCL Code
142	Branch if >= Parameter 2		

Action Code: 142

Parameter 1: Signed offset -128 to 127

Parameter 2: Unsigned Parameter to be compared

This action skips action bytes according to a signed offset -128 to 127 in parameter 2 if the return value from the previous action is greater than or equal to parameter 1.

E.g.

81,2 Get Counter 2 value

142, 3, 10 Branch +3 bytes if value >= 10

128,1,1 Output 1 On

128,2,1 Output 2 ON

If the value of counter 2 is >= 10, the action sequence will skip Output 1 ON (128,1,1) and will continue at Output 2 ON

See the example of Action 113 for branch to negative offset

From V4.233

Action Code	Description	Resp Wizard Category	CCL Code
143	Branch if < Parameter 2		

Action Code: 143

Parameter 1: Signed offset -128 to 127

Parameter 2: Unsigned Parameter to be compared

This action skips action bytes according to a signed offset -128 to 127 in parameter 2 if the return value from the previous action is less than parameter 1.

E.g.

81,2 Get Counter 2 value

143, 3, 10 Branch +3 bytes if value < 10

128,1,1 Output 1 On

128,2,1 Output 2 ON

If the value of counter 2 is < 10, the action sequence will skip Output 1 ON (128,1,1) and will continue at Output 2 ON

See the example of Action 113 for branch to negative offset

From V4.233

Action Code	Description	Resp Wizard Category	CCL Code
144, 0	Exit if = parameter2		
144, 1	Exit if <> parameter2		
144, 2	Exit if >= parameter2		
144, 3	Exit if < parameter 2		

Action Code: 144

Parameter1: 0, 1, 2, 3

Parameter2: Unsigned Parameter to be compared

This action exits from the response if the condition defined by parameter 1 is met

E.g.

81,2 Get Counter 2 value

144, 0, 3 Exit if value = 3

144, 1, 5 Exit if value <> 5

144, 2, 180 Exit if value >= 180

144, 3, 200 Exit if value >= 200

From V4.233

Action Code	Description	Resp Wizard Category	CCL Code
145	Branch if = Parameter 2		

Action Code: 145

Parameter 1: Signed offset -128 to 127

Parameter 2: Unsigned Parameter to be compared

This action skips action bytes according to a signed offset -128 to 127 in parameter 2 if the return value from the previous action is equal to parameter 1.

E.g.

81,2 Get Counter 2 value

145, 3, 10 Branch +3 bytes if value = 10

128,1,1 Output 1 On

128,2,1 Output 2 ON

If the value of counter 2 is =10, the action sequence will skip Output 1 ON (128,1,1) and will continue at Output 2 ON

See the example of Action 113 for branch to negative offset

From V4.233

Action Code	Description	Resp Wizard Category	CCL Code
146	Branch if <> Parameter 2		

Action Code: 146

Parameter 1: Signed offset -128 to 127

Parameter 2: Unsigned Parameter to be compared

This action skips action bytes according to a signed offset -128 to 127 in parameter 2 if the return value from the previous action is NOT equal to parameter 1.

E.g.

81,2 Get Counter 2 value

145, 3, 10 Branch +3 bytes if value <> 10

128,1,1 Output 1 On

128,2,1 Output 2 ON

If the value of counter 2 is <> 10, the action sequence will skip Output 1 ON (128,1,1) and will continue at Output 2 ON
 See the example of Action 113 for branch to negative offset
 From Firmware 4.233

Action Code	Description	Resp Wizard Category	CCL Code
147	Time Program Enable/Disable	Misc	?

Action Code: 147

Parameter 1 Time program number (1 to 32 for Ultra II)

Parameter 2 0 = off, 1 = on

This action enables or disables Time Programs. This can be used to disable Time programs based on any condition and vice versa, for example to prevent auto-arming of the security system when there is a party

From Firmware 5.172

Action Code	Description	Resp Wizard Category	CCL Code
148	Multiply	Misc	Multiply

Action Code 148

Parameter 1 0 = Immediate, 1 = Counter, 2 = Sensor

Parameter 2 Immediate value, counter no or sensor no depending on parameter 1

When the two numbers are multiplied, the result is a 16 bit value. The result is available to be used in the next action as Last Value, while the higher or most significant byte is returned by action 38

Eg

Parameter 1 = 0 (Immediate)

81,2 get counter 2 value
 148, 0 17 Multiply value by 17
 103,2 Save 16 bits value in Counter 2
 38 Get High byte of result
 103,3 Save value in Counter 3

Parameter 1 = 1 (Counter)

81,2 get counter 2 value
 148, 0 ,2 Multiply value by contents of Counter 2
 103,2 Save 16 bits value in Counter 2
 38 Get High byte of result
 103,3 Save value in Counter 3

Parameter 1 = 2 (Sensor)

81,2 get counter 2 value
 148, 2 ,2 Multiply value by contents of Sensor 2
 103,2 Save 16 bits value in Sensor 2
 38 Get High byte of result
 103,3 Save value in Sensor 3

From Firmware 5.172

Action Code	Description	Resp Wizard Category	CCL Code
149	Add	Misc	Add

Action Code 149

Parameter 1 0 = Immediate, 1 = Counter, 2 = Sensor

Parameter 2 Immediate value, counter no or sensor no depending on parameter 1
When the two numbers are added together, the result is a 16 bit value. The least significant byte is returned as a value to be used in the next action, while the higher or most significant byte is returned by action 38

Eg

Parameter 1 = 0 (Immediate)

81,2 get counter 2 value
149, 0 17 Add 17 to value
103,2 Save 16 bits value in Counter 2
38 Get High byte of result
103,3 Save value in Counter 3

Parameter 1 = 1 (Counter)

81,2 get counter 2 value
149, 0 ,2 Add value to contents of Counter 2
103,2 Save 16 bits value in Counter 2
38 Get High byte of result
103,3 Save value in Counter 3

Parameter 1 = 2 (Sensor)

81,2 get counter 2 value
149, 2 ,2 Add value to contents of Sensor 2
103,2 Save 16 bits value in Sensor 2
38 Get High byte of result
103,3 Save value in Sensor 3

From Firmware 5.172

Action Code	Description	Resp Wizard Category	CCL Code
150	Sunrise/Sunset Time Offset	Misc	?

Action Code 150

Parameter 1 0 = Sunrise, 1 = Sunset

Parameter 2 Signed value of Minutes to adjust sunrise or sunset, -128 to +127

This is used to offset the sunrise or sunset time by a signed value in minutes to bring forward or delay the sunrise or sunset Response times, It does NOT change the Night Time Flag which is set at Sunset and cleared at sunrise

Eg

150, 0, 40 Delay Sunrise Response by 40 minutes
150, 1, 190 Bring forward Sunset Response by 66 minutes (256-190)

From Firmware 5.172

Action Code	Description	Resp Wizard Category	CCL Code
151	Initialise Sensor	Sensor	?

Action Code 151
Parameter 1 Sensor no 0 to 31
Parameter 2 Sensor value 0 to 255
From Firmware 5.174

Action Code	Description	Resp Wizard Category	CCL Code
152	Enable/disable User Code	Security	?

Action Code 152
Parameter 1 User no 1 to 16 or 0 for all users
Parameter 2 0 = Off (disable), 1 = enable, 2 = check (return 0 or >0)
User 1 code cannot be disabled
From Firmware 6.019

Action Code	Description	Resp Wizard Category	CCL Code
153	Load 2 byte value	Sensor or Counter	?

Action Code 153
Parameter 1 Signed Least Significant Byte
Parameter 2 Signed Most Significant Byte
The value is 2 bytes twos complement format with sign bit in the most significant bit of the 16 bit value.

Eg

153, 50, 01 Load value 306
103, 10 Put value into Counter 10

153, 150, 0, Load value 150
121, 6 Put Value into Sensor 6

Defined 24/1/2013

Action Code	Description	Resp Wizard Category	CCL Code
154	Virtual Input On/Off	Security	?

Action Code 154
Parameter 1 Zone/Input 1 to Max
Parameter 2 0 = Off, 1 = ON
Activate Virtual Input. Zone must be programmed as Virtual
From Firmware 6.070

Action Code	Description	Resp Wizard Category	CCL Code
155	Send Custom SMS Message to Phone	Misc	?

Action Code 155
Parameter 1 Phone # 1 to 8)
Parameter 2 Message # 1 to 64

This action sends a Message by SMS to Phone. It applies to UCM/GSM4 only

Eg

155, 01, 2 means send SMS to Phone 1, Message 2 defined in UCM/GSM4

Action Code	Description	Resp Wizard Category	CCL Code
156	Keypad Backlight on/off	Misc	?

Action Code 156

Parameter 1 Keypad ID 41H to 4FH, 40H for broadcast to all KPs

Parameter 2 0 = Off, 1 = on

From Firmware 7.061

Action Code	Description	Resp Wizard Category	CCL Code
157	Divide	Misc	Divide

Action Code 157

Parameter 1 0 = Immediate, 1 = Counter, 2 = Sensor

Parameter 2 Immediate value, counter no or sensor no depending on parameter 1

The divisor is 8 bits, dividend is 16 bits, the result (quotient) ie 8 bits. It is up to the programmer to prevent overflow. The remainder is also available using action 38

The value is available to be used in the next action as Last value, while the higher or most significant byte is returned by action 38

Eg

Parameter 1 = 0 (Immediate)

81,2 get counter 2 value

157, 0 100 Divide value by 100

103,2 Save value in Counter 2

Parameter 1 = 1 (Counter)

81,2 get counter 2 value

157, 0 ,2 Divide value by contents of Counter 2

103,2 Save value in Counter 2

Parameter 1 = 2 (Sensor)

81,2 get counter 2 value

157, 2 ,2 Divide value by contents of Sensor 2

103,2 Save value in Sensor 2

38 Get High byte of result

103,3 Save value in Sensor 3

Defined 6 March 2015

Action Code	Description	Resp Wizard Category	CCL Code
184	Branch if = 2 byte constant	If	
185	Branch if <> 2 byte constant	If	

Action Code	Description	Resp Wizard Category	CCL Code
186	Branch if >= 2 byte constant	If	
187	Branch if < 2 byte constant	If	

Action Code: 184-187

Parameter 1: Signed offset Branch -128 to 127

Parameter 2: Signed Parameter Least Significant Byte to be compared

Parameter 3: Signed Parameter Most Significant Byte to be compared

This action skips action bytes according to a signed offset -128 to 127 in parameter 1 based on the result of a comparison of the incoming value and a signed 16 bit value.

Eg

81,2	Get Counter 2 value
184, 3, 255, 0	Branch +3 bytes if value = 255
128,1,1	Output 1 On
128,2,1	Output 2 ON

Eg

116,9	Get sensor 9 value
185, 3, 01, 02	Branch +3 bytes if value <> 513
128,1,1	Output 1 On
128,2,1	Output 2 ON

Eg

31	Get last counter
186, 3, 00, 128	Branch +3 bytes if value >= -32768
128,1,1	Output 1 On
128,2,1	Output 2 ON

E.g.

36	Get last sensor
187, 3, 10, 01	Branch +3 bytes if value < 266
128,1,1	Output 1 On
128,2,1	Output 2 ON

If the value of counter 2 is < 266, the action sequence will skip Output 1 ON (128,1,1) and will continue at Output 2 ON

Implemented 7.027

Action Code	Description	Resp Wizard Category	CCL Code
188, 0	Exit if = 2 byte constant	If	
188, 1	Exit if <> 2 byte constant	If	
188, 2	Exit if >= 2 byte constant	If	
188, 3	Exit if < 2 byte constant	If	

Action Code: 188

Parameter 1: 0 = Exit if =, 1 = Exit if <>, 2 = Exit if >=, 3 = Exit if <

Parameter 2: Signed Parameter Least Significant Byte to be compared

Parameter 3: Signed Parameter Most Significant Byte to be compared

E.g

36 Get Last Sensor
188,0, 100, 1 Exit if = 356

E.g.

31 Get Last Counter
188,1,10, 5 exit if <> 1290

E.g.

116,9 Get Sensor 9 value
188,2,0,0 exit if >=0

E.g.

81,9 Get counte 9 value
188,3,0,10 exit if < 10

Implemented 7.027

Action Code	Description	Resp Wizard Category	CCL Code
189	Blinds Control	Output	

Action Code: 189

189, ID, Blind #, Operation

ID = 01 for comfort

Blind No addresses the blinds numberin the module, max 8 in Comfort and SEM, 4 in RIO

Operation: 0= Stop, 1 = Up, 2 = Down, 5 = Step Up, 6 = Step Down

Eg

189, 1, 1, 2 means Comfort Blind #1 Down

189, 33, 1,1 means SEM 1 Blind #1 Up

189, 81, 3, 0 means RIO 1 Blind #7 Stop

Action Code	Description	Resp Wizard Category	CCL Code
190	Start Inline Delay	Do	Inline Delay n Seconds Using Timer_name

190 - Start Timer (190, TimerNo, Timer High byte, Timer Low byte,)

Start Inline Timer 1 to 64

64 Timers are available (Ultra). These timers count down from a starting count of 1 to 65278 seconds (so FF is not used in the 2 bytes). When the timer reaches zero count, the next action in the response is executed. The 64 timers can run concurrently. Each timer may be used for more than one purpose if they do not overlap in time.

Action Code: 190

Parameter 1: Timer 1 to max

Parameter 2: timer count high byte - Seconds/256 (0 to 254)

Parameter 3: timer count low byte - remainder Seconds (0 to 254)

Code		Category	
194	Start Timer	Do	Do Response_name After n Seconds Using Timer_name

194 - Start Timer (194, TimerNo, Timer High byte, Timer Low byte, Response) for OPTimum

194 - Start Timer (194, TimerNo, Timer High byte, Timer Low byte, Response Low byte, Response High byte) - for Ultra

Start Timer 1 to 64 (Ultra)

64 Timers are available (Ultra). These timers count down from a starting count of 1 to 65278 seconds (so FF is not used). When the timer reaches zero count, it stops and activates a Response. All timers can run concurrently. Each timer may be used for more than one purpose if they do not overlap in time.

Action Code: 194

Parameter 1: Timer 1 to max

Parameter 2: timer count high byte - Seconds/256 (0 to 254)

Parameter 3: timer count low byte - remainder Seconds (0 to 254)

Parameter 4: Response 00 to 255

Parameter 5: Response High Byte for Comfort Ultra only.

The Timer value in seconds is entered in action codes 3 and 4 (16-bit value)

If Timer Count = 0, the timer value is taken from the last value - from firmware 7.048.

Eg

81, 10 get Counter 10

194, 1, 0, 0, 04, 00 Do Response 4 using Timer 1 for time in incoming value (from counter 10)

The Timer count is calculated as follows:

If X is the count in seconds, divide X by 256. The quotient is the value to enter for Parameter 2. The remainder is multiplied by 256 and entered in action code 4. Remember that the values are entered in decimal.

Example:

194,01,02,88,02 Start Timer 1, count = 600 seconds (02,88) and do Response 2

194,08,03,232,77 Start Timer 8, count = 1000 seconds (03,232) and do response 77

194,05,189,234,12 Start Timer 5, count = 48618 seconds (189,234) and do response 12

For Comfort Ultra

194, 01, 00, 05, 107, 03 Start Timer 1, count = 5 seconds, and Do Response 875 (3 x 256 + 107)

Avoid 255 in the Response high byte and low byte as this will terminate the Response entry.

Note:

Avoid 255 in any of the action codes, otherwise the system will treat it as a terminator. This is why the maximum value for the timer count is 65278

Responses activated by Action 194 are not nested, i.e., they are at the same level. Hence it is possible for a timers to do the following:

Response 95: 128,1,1,194,1,0,5,97,255 (Output 1 on, Start Timer 1 5 seconds & Response 97)

Response 97: 128,1,0,194,1,0,5,95,255 (Output 1 off, start timer 1 5 seconds & Response 95)

Response 95 switches Output 1 on and starts timer 1 for 5 seconds. At the end of 5 seconds, Response 97 switches off output 1, starts timer 1 for 5 seconds and goes back to Response 95. This has the effect of flashing output 1 on and off at intervals of 5 seconds. To stop the flashing sequence, use another Response to stop the timer using Action 85 (Stop Timer). Note that the same timer can be used in different Responses as long as they do not run at the same time.

Action 85 stops a timer

Action 86 checks a timer and returns 1 if it is running, 0 if it is not.

Action Code	Description	Resp Wizard Category	CCL Code
195	X10 Command	X10	X10 h u AllUnitsOff AllLightsOn On Off Dim Bright AllLightsOff Extended1 Extended2 Extended3 (h = housecode, u = unit)

Send X10 command via the TW7223 module.

Action Code 1: 195

Parameter 1: X10 housecode A to P. Enter ASCII characters for A to P as follows:

Housecode	ASCII	Housecode	ASCII	Housecode	ASCII	Housecode	ASCII
A	65	E	69	I	73	M	77
B	66	F	70	J	74	N	78
C	67	G	71	K	75	O	79
D	68	H	72	L	76	P	80

Parameter 2: Unit code 1 to 16 which addresses the X10 module. For X10 commands which address all or a group of keycodes, this parameter is ignored. If Unit Code =0, only the Function Code is sent.

Parameter 3: Function code which defines the action to be performed by the module, according to the table below:

Function	Code	Function	Code
All Units off	01	Dim (from 4.97)	9
All Lights On	03	Bright (from 4.97)	11
Unit ON	05	Extended Code 1 for Data/Control	15 (from O4.135)
Unit OFF	07	Extended Code 3 for Meter	21 (from O4.135)
All Lights off	13	Extended Code 2 for Security	25 (from O4.135)
Hail Request	17	Status On	27
Hail Acknowledge	19	Status Off	29
		Status Request	31

If Function Code=0, no function code is sent, only the unit code.

The extended codes 1,2,3 and Hail Request, Hail Acknowledge, Status On, Status Off, Status Request are not understood by most X10 modules.

Example:

195,65,02,05 sends 'A2' ON code to the X10 Module address A2

Example:

196,65,01 sends A1

196,65,00,05 Sends A On. This switches on A1 due to the two x10 commands
 To make more compact responses you can use Action code 74 (do response) for
 switching multiple X-10 modules in a command string.
 74,33,74,34,74,35 where Response 33=A1 ON, 34=A2 ON, 35=A3 ON.
 Infrared, Pulsed output, and X10 actions may require several seconds to complete.
 These output control actions, including Action 128 are placed in a 16-event queue for
 sequential execution and cannot take place concurrently.
 Dim and Bright command format from Firmware 4.23 to 4.96:
 195,66,5,137 DIM for 4 cycles to j@B5j⁻. No of cycles x 32 = 128 + 9 = 137(for
 v4.23 to v4.97)

From 4.97, the Dim and Bright commands have been changed. Action 109 is
 used to set the number of repeat cycles for the Dim and Bright commands, instead of
 embedding the repeat cycles in the Dim/Bright Command. This new method allows up
 to 32 dim or bright repeat cycles to be implemented, instead of just 7 with the old
 method.

E.g. To dim A5 by 10 cycles using the new method, use actions

109,10 (set no. Of cycles to 10)

195,65,5,9,255. (X10 A5 dim)

Prior to 4.165, that the dimlevel set by action 109 becomes zero after every dim or
 bright command, and does not persist.

From 4.165, the dim level set by action 109 will persist until changed by another action
 109. Also X10 dim and bright commands will have a minimum of 2 cycles and a
 maximum of 31 cycles regardless of the dim level set by action 109.

The Extended codes 15,21,and 25 will cause X10 extended codes to be sent, with the
 extended data and command codes set by Action 140 which is available only from
 O4.135. Only Extended Code 15 for Data/Control have been defined. See Action 140.

Action Code	Description	Resp Wizard Category	CCL Code
196	Invert Skip Flag	If	InvertSkip

Invert current condition of the skip flag. If the skip flag is set (by a previous action),
 clear the skip flag. If the skip flag is not set, then set the skip flag

Example:

```

..
15          Skip to Marker if zero (if result is zero, set skip flag)
...        these actions are executed if result is not zero
...
196         Invert skip flag. If skip flag is set, clear it. If skip flag is not set, set it
..        these actions are executed if the earlier result was zero, and skipped
..        if result was not zero
..
192         Marker, clears skip flag for both branches
  
```

Action Code	Description	Resp Wizard Category	CCL Code
197	Send Data to UCM	Output	Send RS232 n hh,hh,...,hh (hh = 00-FF)

Action 1: 197

Parameter 1: id (17 to 24 for UCM 1 to 8)

Parameter 2,... Data to be sent to UCM RS232 port

Send data to the RS232 port of UCM. The data sent to the UCM id is interpreted according to the type of UCM addressed. The number of parameters is not fixed - there may be 2 to 30 parameters following the action.

The character 15 is an Escape character. When followed by 253, the character 255 (FF in hex) is sent. 255 cannot be entered as part of the data because it terminates the Response. Escape followed by 254 (FE hex) ends the action which can have any number of parameters from 2 to 30. Escape followed the same escape character sends the Escape character (15) by itself. Escape followed by any other character other than 253,254, and 15 sends the character without the Escape character.

Note that Escape characters have no effect when sent by DAC5 command, they work only for voice menu responses.

The following UCMs which process the command as described below:

- UCM, 232, USB, Ethernet will echo the characters sent in this action to the port with STX character, and will append a CR after the end of data. **From UCM Firmware 4.30, SW8-G shorted disables sending of STX and CR.**
- UCM/CBUS, where the data is interpreted as Group Address, command, ramp level etc. Refer to the Comfort to C-Bus Interface Manual for details
- UCM/KNX where the data is interpreted as KNX Group Address, and command. Refer to the Comfort to KNX Interface Manual for details

There can be up to 8 UCMs in a Comfort system

Action Code	Description	Resp Wizard Category	CCL Code
198	Copy Counter to Counter(s)	Counter	Copy Counter Counter_name To Counter_name[, Counter_name,...]

Action 1: 198

Parameter 1: Master Counter

Parameter2,... Counter numbers which shall be set to the same value as the Master Counter.

The parameter list is terminated by 255 which also ends the Response.

This action sets the value of all counters specified to that of a master counter. The value of the counters is returned.

This is useful for UCM/EIB and UCM/CBUS where the value of a Master Group address must be copied to all group addresses belonging to the Master Group address.

E.g.:

198, 10, 2,3,4,5,255

Copy the value of Counter 10 to Counters 2,3,4,5 and return the value in the counters.

E.g.

198, 1,2,255

Copy the value in Counter 1 to Counter 2 and return the counter value.

From Firmware 4.177

Action Code	Description	Resp Wizard Category	CCL Code
199	Announce Words		

Action 1: 199

Parameter 1: word 1

Parameter 2: word 2

Parameter 3: word 3

..

Parameter 6: word 6

Up to 6 words from the wordlist may be announced. If less than 6 words are required, enter 255 which also ends the Action, NOT the Response

E.g.:

199, 1, 2,3,4,5,255

Announce on all keypads the words Airconditioner, back, balcony, basement, beam, bedroom, which are words 1 to 6 in the wordlist

255 is a terminator for the action, NOT the Response, eg

199, 1,2,3, 255, 128, 1,1, 255

The above response announces words 1,2,3 and turns on Output 1 (128,1,1).

Note that The keypad voice menu will not allow 255 to be entered as that terminates the response so the above actions can be entered using Configuraatoro only

The announce zone action (action 1) announces the zone words of the zone when it is activated, but the action does not work for non-zone events, e.g. IR receive or X10 receive events. Action 199 is able to announce any 6 words in any recognised event

If there are exactly 6 words in the list then do not add a terminator.

Eg 199, 1,2,3,4,5,6,255 ends the Response, not just terminates the Action

From Firmware 4.233

Action Code	Description	Resp Wizard Category	CCL Code
200	Open Door		

Action 1: 200

Parameter 1: ID

Parameter 2: Door No 1 or 2

Parameter 3: Duration in 100 ms units. If = 0 this means Close Door. If =255, it means Open Door

E.g.:

200, 49, 1, 10

Open Door 1 on Door Station 1 for 1 second.

200, 49, 2, 0

Close Door 2

The ID addressed should be the Door Station

From Firmware 5.049

Action Code	Description	Resp Wizard Category	CCL Code
201	Send Value to UCM	Output	Send Value <i>nn hh,hh,...,hh</i> (hh = 00-FF)

Action 1: 201

Parameter 1: id (17 to 24 for UCM 1 to 8)

Parameter 2,... Text to be sent to UCM RS232 port

Send Text to the "RS232" port of UCM with value. The data sent to the UCM id is interpreted according to the type of UCM. The number of parameters is not fixed - there may be 2 to 30 parameters following the action.

The value to be sent to the UCM shall be the Return Value of the previous action code in 2 bytes Most significant followed by Least significant Byte.

Eg for Counter Response,

31

Get Last UCM Counter

201, 18, 1,2,3,4,255 send value to UCM and 1,2,3,4

Action 31 is get Last Counter Value.

Action 201, 18, Means send the value from Counter and text 1,2,3,4 to ID 18H ie UCM ID 2

The message sent to the UCM (in Hex) is 00,FF, 01,02,03,04

The 1st 2 bytes are the value. 2 bytes are used to cater for 16 bit values. If the value is 8 bits, then the 1st byte is 00.

This is similar to action 197 which sends a text string to the UCM without any value.

This allows SCS and other input devices to send on and off or level commands to UCMs eg Cbus and KNX without the use of If /Then commands thus simplifying programming.

Note that Escape characters have no effect when sent by DAC5 command, they work only for voice menu responses.

Defined 29 April 2012 For Consideration

Action Code	Description	Resp Wizard Category	CCL Code
255	Terminate Response		I

Terminate the Response

Revision History

- 2.4.6 (6 March 2015) -added action 157 (Divide)
- 2.4.5 (23 Aug 2014) - added action 156 Keypad Backlight on/off
- 2.4.4 (9 March 2014) - added Action 190 Inline delay
- 2.4.3 (3 Feb 2014) - Action 194, timer count if = 0 is taken from incoming value
- 2.4.2 (8 Sept 2013) Add 189 Blinds Control. Document 42, 43. Change in action 155, action 73 added parameters 30 and 31
- 2.3.7 (24 Jan 2013) added actions 120, action 121. Action 153= load 2bytes, 184- 188
- 2.3.6 (1 Jan 2013) add action 155
- 2.3.5 (1 Oct 2012) add Actions 118, 119, 154,
- 2.3.3 (31 August 2012) added action 153 load sensor with incoming
- 2.3.2 (29 April 2012) defined action 201
- 2.3.1 (14 April 2012) 73,24 User Numbers changed
- 2.3.0 (5 February 2012) - added actions 151, 152
- 2.2.8 (16 December 2010) - amended description of Action 197 and 199
- 2.2.6 (15 November 2010) - Action 117 Change Entry Delay.
- 2.2.5 (20 March 2010) - action 90 add for slaves
- 2.2.4 (26 June 2009) - added action 35-41, 147 to 150, removed 117
- 2.2.3 (10 March 2009) - added actions 32, 33, 34
- 2.2.2 (1 February 2009) - Corrected error for action 142,143, 145, 146 in main table
- 2.2.1 (31 October 2008) - Corrected error in Action 132 Toggle action
- 2.2.0 (14 November 2007) - corrected error in Action 133, Play Remin der on all DS
- 2.1.9 (22 October 2007) - corrected Error Action 200 ID is for Door station
- 2.1.8 (23 August 2007) - Minor corrections
- 2.1.6 (15 Sept 2006) - Added Action 73,23 Get Night Flag

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