



## Accessort Outputs

The following wires can be found in the loom by the alarm ECU, and these can be used to drive certain accessories. The alarm system may have to be re-programmed to select some of these features using the keypad or a CP1 dealer programmer.

It must be remembered that the maximum current output of these wires is 200 mA - 0.20 amps and so a relay is usually required to prevent damaging the output circuit.

### **WIRE 3 (GREEN/BLACK – Programmable Accessory Output 1)**

This wire can be connected to any accessories that need to know when the alarm unit is “armed” such as additional LEDs and accessories such as tilt sensors.

With the alarm in it’s standard form this wire supplies a ground (-ve output) only when the alarm unit is “armed” **OR** can be programmed (see programming instructions) to be a negative output only whilst the remote key button remains pressed on disarming i.e. to operate boot release.

(Maximum current 200 mA - 0.20 amps. Check accessory’s current draw and use a relay if necessary)

### **WIRE 4 (GREEN/RED – Programmable Accessory Output 2)**

This output is turned off if the alarm is in it’s standard form but can be programmed (see programming instructions) to be supply a ground (-ve output) only whilst the remote key button remains pressed on arming i.e. for window closing etc. **OR** a negative output only for a set time, on every occasion the system is disarmed i.e. door courtesy light illumination etc.

(Maximum current 200 mA - 0.20 amps. Check accessory’s current draw and use a relay if necessary)

### **WIRE 18 (GREEN/ORANGE - Accessory Output 3)**

Connect this wire to any accessories that need to know when the alarm unit is sounding off (e.g. additional 12v siren, internal siren, strobes, pager etc.). This wire in the alarm systems standard form supplies a ground (-ve) only when the alarm unit is sounding off.

(Maximum current 200 mA - 0.20 amps. Check accessory’s current draw and use a relay if necessary)

## Full Programming, Diagnostics and Features

**This section contains all the the information that the dealers use for programming and diagnosis of the Sigma M30 alarm system, using the MK1 keypad programmer.. Programming can also be carried out using a dealers CP1 programmer.**

### **MK1 Keypad Programming Introduction**

#### **It is important the keypad buttons are not pressed too quickly-**

Each time a button is pressed the LED on the keypad will flash once as confirmation. The next button should not be pressed before this confirmation.

#### **It is important the keypad buttons are not pressed too slowly-**

When in programming mode, if a button is not pressed for a period of 10 seconds or more, the alarm will automatically exit programming mode. This will be confirmed by repeated flashes from LED on the keypad. You must wait until the LED stops flashing and then start again.

All programming functions are entered after typing \* and then the programming PIN code. The programming PIN code is **17856**.

To enter the programming PIN code, the alarm system must first be **armed** and then **disarmed** using a valid remote key. (or keypad using the PIN code)

\* **17856** \* **must then be entered within 30 seconds** of disarming the system. This is then followed by a 2 digit function code, then another \* and then sometimes optional parameters as shown in the following tables. It is important to remember the \* key is used to separate the various parts of the code like this:

\* **programming PIN code** \* **function code** \* **parameter #**. The # key is pressed at the end of all sequences and is used like the “enter” key on a computer keyboard .

## Programming Features On or Off:

Programming PIN	Function Code	Switch Code (where 0=off and 1=on)	Function	Default
* 17856	* 00	* 0 or * 1 then #	arm/disarm bleeps	* 0 (off)
* 17856	* 01	* 0 or * 1 then #	door open warning bleeps	* 0 (off)
* 17856	* 02	* 0 or * 1 then #	auto-lock	* 0 (off)
* 17856	* 03	* 0 or * 1 then #	auto-arm	* 0 (off)
* 17856	* 04	* 0 or * 1 then #	auto-arm to include door locking	* 0 (off)
* 17856	* 05	* 0 or * 1 then #	auto-rearm	* 0 (off)
* 17856	* 06	* 0 or * 1 then #	engineer mode	* 0 (off)
* 17856	* 07	* 0 or * 1 then #	hold-down remote key button = -ve output on wire 4	* 0 (off)
* 17856	* 08	* 0 or * 1 then #	hold-down remote key button = extends lock pulse	* 0 (off)
* 17856	* 09	* 0 or * 1 then #	after disarm -ve output on wire 4	* 0 (off)

## Programming Sensitivity Settings:

Programming PIN	Function Code	Parameter(s)	Function	Default
* 17856	* 20	* 0 to * 99 then #	ultrasonic threshold	15
* 17856	* 21	* 0 to * 99 then #	ultrasonic count (number of times threshold is exceeded in one seconds to cause alarm)	10
* 17856	* 23	* 0 to * 99 then #	shut-down count (number of times an individual trigger circuit can be activated during a single set period)	10

### Note regarding ultrasonic operation and adjustment:

The ultrasonic system in the Sigma M30 employs a sophisticated micro processor controlled method of detection. Unlike conventional ultrasonic detectors this method ensures that an actual entry has occurred rather than just air movement, air pressure fluctuation, seat belt movement etc.

The detection system also employs a movement/time method where a certain amount of movement in a given time is required to cause a trigger.

This method of detection offers a high level of protection against false alarms commonly associated with other systems employing inferior methods of detection

In order to test the operation of the ultrasonics it is important to understand how they works when the system is initially armed:

- For the first 16 seconds (settle time) the system allows the air movement inside the vehicle to stabilise. (During this period the LED flashes dimly)
- During the next 16 seconds (threshold settle time) the microprocessor monitors the interior of the vehicle - reducing the sensitivity (from the maximum sensitivity programmed by the installer, if necessary to suit the interior and climate. (During this period the LED flashes brightly - latching on for a second only if movement is detected and the sensitivity has been reduced)

- After the first 32 seconds the system is now fully armed and the ultrasonic sensitivity is set to the programmed maximum or the reduced level if some movement was detected during the “threshold settle time”.(LED now flashing dimly)

Because of the way the ultrasonics operate, if there is a disturbance within the “threshold settle time” the ultrasonics will re-adjust to compensate for this disturbance, if the movement is excessive the ultrasonics may turn themselves off. This re-adjustment can be detected by the dash mounted LED changing from flashing, to a static state for a second. This may happen if the ultrasonics are tested in windy conditions with a window open. If this is the case then the following test method can be performed:

Close all doors, bonnet and windows sitting yourself in the rear of the vehicle. Arm the alarm system keeping **very still**, and observe the dash LED during the “settle time” and then the “threshold settle time”. The LED must remain flashing and should not latch on. After these 2 periods the LED will then flash dimly again, moving your head forward now should trigger the alarm.

### Programming Timing Settings:

Programming PIN	Function Code	Variable(s)	Function	Default
* 17856	* 10	* 1 to * 30 then #	stall to ignition on time in seconds	30 sec
* 17856	* 11	* 1 to * 99 then #	unset to ignition on time in seconds	30 sec
* 17856	* 12	* 1 to * 99 then #	panic time in seconds	05 sec
* 17856	* 13	* 1 to * 51 then #	lock time in seconds (51 gives two short pulses)	01 sec
* 17856	* 14	* 1 to * 51 then #	unlock time in seconds (51 gives two short pulses)	01 sec
* 17856	* 15	* 1 to * 99 then #	settle time in seconds	15 sec
* 17856	* 16	* 1 to * 99 then #	threshold setting time in seconds	15 sec
* 17856	* 17	* 1 to * 99 then #	auto arm time in seconds	60 sec
* 17856	* 18	* 1 to * 99 then #	auto re-arm time <b>and also</b> -ve output time after disarm , on wire 4 (green/red) in seconds	60 sec

### Displaying System Diagnostics:

The dashboard LED displays the value of settings as a number of flashes.

Programming PIN	Function Code	Function
* 17856	* 30 then #	time elapsed since last trigger (in minutes)
* 17856	* 31 then #	as * 30 above - but each flash = 256 minutes
* 17856	* 33 then #	wire 7 (orange) ignition trigger count
* 17856	* 34 then #	wire 1 (blue) -ve door trigger count
* 17856	* 35 then #	wire 2 (blue/red) -ve boot trigger count
* 17856	* 36 then #	-ve bonnet switch trigger count (black single wire on siren plug)
* 17856	* 37 then #	ultrasonics trigger count
* 17856	* 38 then #	last trigger register (see table below)
* 17856	* 39 then #	reset all above trigger counts to 0 (zero)

### Displaying the Last Trigger:

Last trigger displayed by **dashboard** LED. (following pressing \*38 – see previous table)  
 Number of flashes = circuit shown below.

Number of Flashes	Trigger Circuit	Number of Flashes	Trigger Circuit
1	Ignition Trigger	8	Bonnet Trigger
2	Door Trigger	16	Ultrasonic Trigger
4	Boot Trigger		

### Displaying the Current Feature Status - On or Off:

The **dashboard** LED displays status - 2 flashes = feature **on**, and 1 flash = feature **off**.

Programming PIN	Function Code	Function
* 17856	* 40 then #	arm/disarm bleeps
* 17856	* 41 then #	door open warning bleeps
* 17856	* 42 then #	auto lock
* 17856	* 43 then #	auto arm
* 17856	* 44 then #	auto arm and lock
* 17856	* 45 then #	auto re-arm
* 17856	* 46 then #	engineer mode (reduced siren sounding time only)
* 17856	* 47 then #	hold-down remote key button = -ve output on wire 4 (green/red)
* 17856	* 48 then #	hold-down remote key button = extends lock pulse
* 17856	* 49 then #	after disarm -ve output on wire 4 (green/red)

### Displaying the Current Timing Settings

Time displayed by **dashboard** LED. Number of flashes = time in seconds.

Programming PIN	Function Code	Function
* 17856	* 50 then #	stall to ignition on time in seconds
* 17856	* 51 then #	disarm to ignition on time in seconds
* 17856	* 52 then #	panic time in seconds
* 17856	* 53 then #	lock time in seconds (51 gives two short pulses)
* 17856	* 54 then #	unlock time in seconds (51 gives two short pulses)
* 17856	* 55 then #	settle time in seconds
* 17856	* 56 then #	threshold time in seconds
* 17856	* 57 then #	auto arm time in seconds
* 17856	* 58 then #	auto re-arm time <b>and also</b> -ve output time after disarm - on wire 4 (green/red) in seconds

## Displaying the Current Sensitivity Settings:

Value displayed by the dashboard LED. Number of flashes = value.

Programming PIN	Function Code	Function
* 17856	* 60 then #	ultrasonic threshold
* 17856	* 61 then #	ultrasonic count (number of times threshold is exceeded in one seconds to cause alarm)
* 17856	* 62 then #	spikes (upper ultrasonic threshold)
* 17856	* 63 then #	cut off count (number of times a trigger channel can be activated during a single set period)

## Setting Up Pre-set Programmes:

Keying in the following sequences on the keypad sets up a fixed set of features, which can be used as a starting point for further tailoring:

- \* **17856 \* 80 #** everything off, lock and unlock pulses 1 second.
- \* **17856 \* 81 #** as for \* 80 above, with auto-rearm on.
- \* **17856 \* 82 #** as for \* 80 above, with auto-arm on.
- \* **17856 \* 83 #** as for \* 80 above, with auto-rearm and auto-arm on.

\* **17856 \* 80 #** Default setting configures the values shown in the previous tables 1, 2 and 3