

Specifications

Hold off voltage: 10-15 Vdc (13.6 Vdc nominal)  
Current Consumption @ 13.6 Vdc:

	Quiescent	Sounder	Strobe	Total
Orion @ 85dB (A)	SAB ≤ 40 mA	~20mA	~190mA	~160mA
Orion @ 115dB (A)	SAB ≤ 40 mA	~250mA	~190mA	~360mA

Sounder Type:

Acoustic Output:  
Sound duration:  
Sound Output Levels:  
Triggering Method:

Piezo  
Tone  
≤ 15 minutes, ≤ 3 minutes or intermittent  
~85db(A) @ 3 metre / ~115db(A) @ 1 metre  
-ve applied, +ve applied or hold off removed

Strobe Type:

Flash Rate:  
Strobe saver mode:  
Triggering Method:

Xenon  
~ 60 per minute  
~ 7 per minute  
-ve applied, +ve applied or hold off removed

Rechargeable Battery Type:

Nominal Voltage:  
Capacity:

NIMH  
7.2 volt  
330mAh

LED Indicators:

Tamper:

Dimension including outer cover:

EN50131-1: 2006 + A1: 2009

EN50131-4: 200

Tamper and hold off  
Removal from mounting, cover and screw.  
325mm x 210mm x 60mm  
Grade 3 Environmental class IV  
Warning device Type: Z

Safety Precautions

Never remove the cover when the strobe is flashing.  
Wait 3 minutes after the strobe has stopped flashing before removing the cover.  
The piezo transformer will be hot during and after sounding. Whilst not directly hazardous, touching it when hot will cause discomfort and should be avoided.  
When the Orion is in alarm condition, high voltages are present. Before removing the cover, stop the piezo and strobe from operating.  
Failure to observe the following precautions regarding the re-chargable battery could lead to danger of heating, ignition, explosion and leaking of hazardous chemicals.  
Do not throw into a fire.  
Do not heat.  
Do not overcharge.  
Do not reverse charge.  
Do not short circuit the battery wires.  
Do not disassemble.  
Always observe local regulations when disposing of a battery.  
Plastic bags can suffocate, always dispose of packaging carefully.

RoHS compliant.

12

BCORI/H/STD  
BCORI/V/STD  
BCORI/COV/\*

On horizontal version the LED is on the right hand side of the unit with the extra strobe.

Orion

CQR SECURITY

External Warning Device.

Modern design with low profile.  
Dual 85dB(A) and 115dB(A) sound output.  
Horizontal and Vertical versions.  
Selectable trigger wire monitoring.  
Selectable timers.  
Negative or Positive trigger option.  
Fault Output  
Test Input

Operating and Installation Instructions

This self powered external warning device can be installed in security systems up to and including Grade 3 Environmental class IV in accordance with EN50131-1: 2006 + A1: 2009. It complies to EN50131-4: 2009, WD type Z. The warning device features one piezo and one or two strobes for audible and visual indication of an alarm activation. Installer features include selectable timing options and selectable sound output of 85dB(A) and 115dB(A) measured at 3 metres and 1 metre respectively.

CQR Security, 125, Pasture Road, Moreton, Wirral. CH46 4TH, United Kingdom  
Tel: +44 (0) 151 606 9595 Support: +44 (0) 151 606 6311 email: info@cqr.co.uk Web: http://www.cqr.co.uk  
BCORI Issue 2.0

1

Inner Lid

Xenon flash strobe

Terminal Cover

Battery charge LED

Battery Terminals

Cable entry point

Fixing point

Piezo sounder

Rotating fixing point x4

Cover Screw

Connection terminals

Tamper switch

Knockout Spacers for use on uneven walls.

Inner cover retaining screws

Strobe positions for horizontal version.  
Right hand strobe and LED is missing on the vertical version.

2

Orion Reference Chart

Manufacturer	Model	STB	Trig	Hold Off -	Hold Off +	RTN
ADE	Panels	STROBE-	B	A	D	T
Ademco	Infra 16	STR-	BELL-	OV	12V	BELL TAMP R
Aritech	Panels	STROBE-	EXT BELL	BHO	BELL +	EOL res TR
Castle	2500/1000/15-1700 2700 Omega ZX1250	STR- BELL- STR-	BELL- NO / C B- EXB-	HO - HO - HO - 12V- HOLD OFF-	HO + HO + HO + HOLD OFF+ ST + return	SAB TAMP SAB TAMP ST + return
C & K	800L 700L 703 Active 5	ST- ST- ST- ST-	S- S- NO / COM S-	V- BELL - OV V-	V + BELL + SOUND + AUX	R - R - R - 24 TAMP
DSC	Panel 832	STRB TRIG PG2	BELL TRIG BELL -	HOLD OFF -VE AU -	HOLD OFF +VE BELL +	Zone or TAMP Z1
Galaxy	8 60 16	R101/NO SUN	R101/1 BELL	HOLD - AUX - HOLD -	HOLD + AUX + HOLD +	T T T
Gardtech	350 370 580/800	- STB STROBE- STROBE-	BELL - BELL - BELL -	SCBA BELL HOLD - BELL HOLD -	BELL + BELL + BELL +	SCBP SAB TAMP SAB TAMP
Menvier	400/790/900/2200 TSD402/T5690/T5700 800	STB STB- STRB	TRG- TRG- BELL O/P	HO - HO - H/O -	HO + HO + H/O +	BELL TAMP TR - BELL TMP
Pyronix	Conqueror/ Paragon E Paragon Plus/ Octagon Sterling 10 NEW Sterling 10	STB STB STB NO	BA BA BA NO	B/S - B - B - BELL -	B/S + B + B + BELL +	BT BT BT BT
Scantronic	9448/9800 8136 4600/4500 9100/ 9105 9851 500R	STR OP2 STR NO NO NO STR	BELL OP1 BELL NO NO NO BELL	OV AUX - VE OV COM OV OV OV	12V + AUX + VE 12V 12V 12V	TR A/T TR TR TR
Texecom	R8	S	B	D	A	C

Whilst every effort has been made to ensure that the contents of this booklet are correct CQR does not accept liability for loss or damage caused or alleged to have been caused directly or indirectly by this booklet. CQR Security reserve the right to change the design/ specification of this product and/ or the contents of this booklet without notice.

11

Orion Diagnostics

SYMPTOM	CAUSE	REMEDY
Hold-off and tamper LED's flash alternately once per second	Normal operation	N/A
Tamper LED flashes twice per second	Rechargeable battery connected and the tamper switch is closed. No hold-off voltage present	Apply hold-off voltage
Red battery charging LED is not illuminated	Rechargeable battery faulty, damaged or low charge	Allow the battery to recharge. Check condition of battery and replace if necessary
Tamper LED not illuminated	Tamper switch open	Close tamper switch
Hold-off LED not illuminated	12Vdc not present at hold-off terminals	Connect 12Vdc to hold-off terminals, check fuses in panel

10

Orion Mounting Instructions

Identify a suitable mounting location for the warning device on a flat wall. It should not be possible to reach the device without the aid of access equipment, were practical it should be sited under the eaves to give additional protection. To remove the lid, lift up the two screw covers and unscrew both retaining screws a few turns so the lid can open. They do not have to be completely removed. Mark the fixing points on the surface of the selected location. Drill 3 x 8mm holes x 41 mm deep for the enclosed wall plugs, insert the wall plugs into the holes, feed the cable through the cable entry point on the sounder and using the enclosed screws, fix the sounder to the selected location, rotating the screw fixing points if necessary to allow the holes to line up. If the surface is uneven, cut out one or both of the attached stackable packing pieces that will allow the box to sit flat. Please note in order for the tamper protection to conform to grades requiring removal from mounting protection, one of the mounting screws is needed within the tamper mechanism as shown below. Do not overtighten this screw. If forced removal is attempted this the backplate will probably be irreversibly damaged and may need replacing.

Rotating screw fixings

2mm thick spacer

4mm thick spacer

Screw must be fitted here if protection against removal from mounting surface is required.

Fitting the lid closes the switch

Tamper switch

Three way tamper mechanism

Once the backplate has been mounted, the tamper mechanism should be checked for correct operation by fitting the lid and if necessary bend the tamper arm to suit. Once this is complete, the wiring should be carried out in accordance with the next few pages.

3

Orion Circuit Board Layout

Hold Off LED (Vertical Version Only)  
On horizontal version the LED is on the right hand side of the unit with the extra strobe.

Xenon Strobe Tube

LK9 Select between STD 115dB (A) or SPN 85dB (A)

LK8 Select 3 minute timer  
LK7 Select 15 minute timer

LK6 Select intermittent timer

LK5 Select Enable/(Disable) trigger wire monitoring

LK4 Select +ve or (-ve) strobe trigger

LK3 Select +ve or (-ve) siren trigger

LK2 Select +ve or (-ve) tamper return

Battery charging indicator LED

Battery Terminal

STB TRIG -VE +VE RTN FAULT FAULT TEST HOLD OFF

LK1 Select SAB/SCB Mode

Terminal Descriptions

Terminal /Link	Description
STB	Signal from control panel to activate strobe
TRIG	Signal from control panel to activate siren
HOLD OFF -	Permanent 0v supply from the control panel -ve
HOLD OFF +	Permanent 12vdc supply from the control panel +ve
RTN	Tamper return to the control panel
FAULT	Closed circuit going open during a fault condition
TEST	+ve signal from the control panel to activate self test routine
LK1	Select SAB/SCB
LK2	Select siren trigger +ve or -ve
LK3	Select strobe trigger +ve or -ve
LK4	Select trigger wire monitoring Enable or Disable. See Important Note
LK5	Intermittent timer
LK6	15 minute timer
LK7	3 minute timer
LK8	Selectable Sound Level: STD = 115dB (A) SPN = 85dB (A). See Important Note
LK9	

Note: Default settings are in bold.  
Important Note: To comply with Grade 3 requirements, trigger wire monitoring must be enabled, and the sound level must be set to STD unless national or local variations require a lower dB(A) level.

4

Quick Set-up Guide

Installing two Orion units on one system with or without trigger wire monitoring.

1. If trigger wire monitoring is required, ensure that the trigger wire monitoring jumper is in the enabled position and that two 1K resistors are fitted in the panel where indicated below, if they are required.  
2. Connect the five wires between Orion "1" and "2" as shown. Ensure the wire from the Hold Off - terminal on Orion "1" is connected to a terminal block in Orion "1" for connection to the control panel.  
3. Connect the batteries, fit the covers to the Orion's and then power up the control panel.

Orion "1"

Orion "2"

ADE Panels

Texecom Panels

Scantronic Panels

\*Special note

In the event of failure or damage to the trigger wires of the siren or strobe, the Orion will indicate by sounder or strobe depending on which one has failed.

9

Quick Set-up guide.

\* With trigger wire monitoring.

1. Ensure that the trigger wire monitoring jumper is in the enabled position.  
2. Connect the wires to the Orion as shown below.  
3. Plug in the battery and one beep will be heard.  
4. Ensure the tamper switch will close properly and fit the lid, two beeps will be heard.  
5. The tamper LED should start to flash twice a second. This will stay like this until hold off voltage is applied or the battery goes flat.  
6. Connect the control panel as indicated below and switch on. Two 1 k resistors must be fitted prior to power up.  
7. The hold off LED will now flash with the tamper LED. Two beeps will be heard.  
8. After a few seconds the unit will beep again and the LED's will flash alternately.  
9. After 5 minutes the engineer mode will expire and the LED's will flash at the normal rate of once per second.

ADE Panels

Texecom Panels

Scantronic Panels

\*Special note

In the event of failure or damage to the trigger wires of the siren or strobe, the Orion will indicate by sounder or strobe depending on which one has failed.

8

Features

Engineer Hold-Off

During the initial connection, it is possible to connect the rechargeable battery without the siren activating, thus, the siren can be mounted and connected at the same time (one trip up the ladder) without the need to return to the unit once the hold-off voltage is applied. Please note this feature is only applicable upon initial installation or if the Orion has been completely de-powered i.e. Hold-off supply and the rechargeable battery disconnected.

Engineer Mode

When hold-off voltage has been applied, the unit will first self check, before entering test mode. This test mode lasts for 5 minutes. During this time, if the sounder is tested, it will sound for 3 or 15 seconds only, depending on which time is selected. This allows testing of the installation without excessive noise. When the test mode expires the unit will emit a brief sound and the flashing LED's will speed up to 1 flash per second.

Strobe Tube Saver

When activated, the strobe will flash at 60 flashes per minute for the first hour, after which the flash rate reduces to 1 every 8 seconds.

Battery Monitor

The rechargeable battery is constantly monitored to determine whether it is no longer able to power the device in the event of the hold off voltage being removed. Upon installation the battery monitor may indicate a fault for a few minutes until the battery has received sufficient charge.

Fault Output

This output signals a failure of the battery. When a failure is detected the normally closed circuit goes open. When a remote test is started, the fault output opens the circuit which remains open if a fault is detected and closes if no faults are detected. This output also opens circuits when the device detects that the siren trigger wire has been removed. (Only if trigger wire monitoring is enabled)

Test Input

Applying a positive signal from a control panel to this connection will start a local self test procedure.

OPTIONS

Please note: To access LK2-LK9 the inner cover, which is secured with two screws, will have to be removed. LK1 is accessible via the terminal cover.

TERMINALS: All Terminals are accessible via the terminal cover.

LK1 SAB/SCB

SAB (Default): When activated, all power required to operate the siren is drawn from the control panel

SCB: When activated, all the power to operate the siren is drawn from the device's internal battery.

LK2 Tamper RTN

Allows you to select either a negative signal (default) or a positive signal for the tamper return output.

\*Special note

The loss of the remote power source to the device will activate the siren for the time selected by LK6, LK7 or LK8

5

Options (continued)

LK3 Siren

Allows you to select the triggering method to activate the siren, either -ve applied (default) or +ve applied.

LK4 Strobe

Allows you to select the triggering method to activate the strobe, either -ve applied (default) or +ve applied.

LK5 Trigger Wire Monitoring

This is mandatory for all grade 3 installations. When selected, the device monitors the siren and strobe trigger wire's integrity by means of monitoring resistors. These resistors are connected to the opposite signal that is required to activate the siren or strobe i.e. negative siren trigger signal (default), the monitoring resistor is connected between a positive and the trigger wire in the control panel. In the event of the siren trigger wire being cut or removed, the fault output circuit will open, in the event of the strobe trigger wire being cut or removed the strobe will start to flash. The fault output circuit will NOT be activated.  
Note: Fitting the resistor in the device does not comply with grade 3 requirements.

LK6 Intermittent Timer

When selected the siren will sound for a maximum cycle of 3 times.  
50 sec ON, 50 sec OFF, 50 sec ON, 50 sec OFF, 50 sec ON then stops. (times are approximate).

LK7 15 Min Timer (default)

When selected the siren will sound for a maximum of 15 minutes (times are approximate).

LK8 3 Min Timer

When selected the siren will sound for a maximum of 3 minutes (times are approximate).

LK9 Sound Output

Allows selection of the sound output level of either 115dB (A) @ 1 m (default) or 85 dB (A) @ 3m

Operating Instructions

Please follow the Set-up guide for instructions on setting up the device for the configuration required.

To activate the siren apply an appropriate signal (depending on selected option LK3) to the TRIG terminal. To deactivate the siren, remove the applied signal.

To activate the strobe apply an appropriate signal (depending on selected option LK4) to the STB terminal. To deactivate the strobe, remove the applied signal.

If the devices tamper protection is activated, the RTN terminal signal (depending on selected option LK2) will be removed. Deactivating the tamper protection will result in the terminal being restored.

If the rechargeable battery is disconnected from the device or is not capable of supplying power to the device, then, in the event of the removal of the remote power source, the Fault output circuit will open.

The loss of the remote power source to the device will activate the siren for the time selected by LK6, LK7 or LK8

\*Special note

Please be aware that if trigger wire monitoring is disabled, in the event of failure or damage to the trigger wires of the siren or strobe, in most cases the control panel will not signal the fact that the siren and/or strobe are in fact disabled.

6

Quick Set-up guide.

\* Without trigger wire monitoring.

1. Ensure that the trigger wire monitoring jumper is in the disabled position.  
2. Connect the wires to the Orion as shown below.  
3. Plug in the battery and one beep will be heard.  
4. Ensure the tamper switch will close properly and fit the lid, two beeps will be heard.  
5. The tamper LED should start to flash twice a second. This will stay like this until hold off voltage is applied or the battery goes flat.  
6. Connect the control panel as indicated below and switch on.  
7. The hold off LED will now flash with the tamper LED. Two beeps will be heard.  
8. After a few seconds the unit will beep again and the LED's will flash alternately.  
9. After a minutes the engineer mode will expire and the LED's will flash at the normal rate of once per second.

ADE Panels

Texecom Panels

Scantronic Panels

\*Special note

Please be aware that if trigger wire monitoring is disabled, in the event of failure or damage to the trigger wires of the siren or strobe, in most cases the control panel will not signal the fact that the siren and/or strobe are in fact disabled.

7